

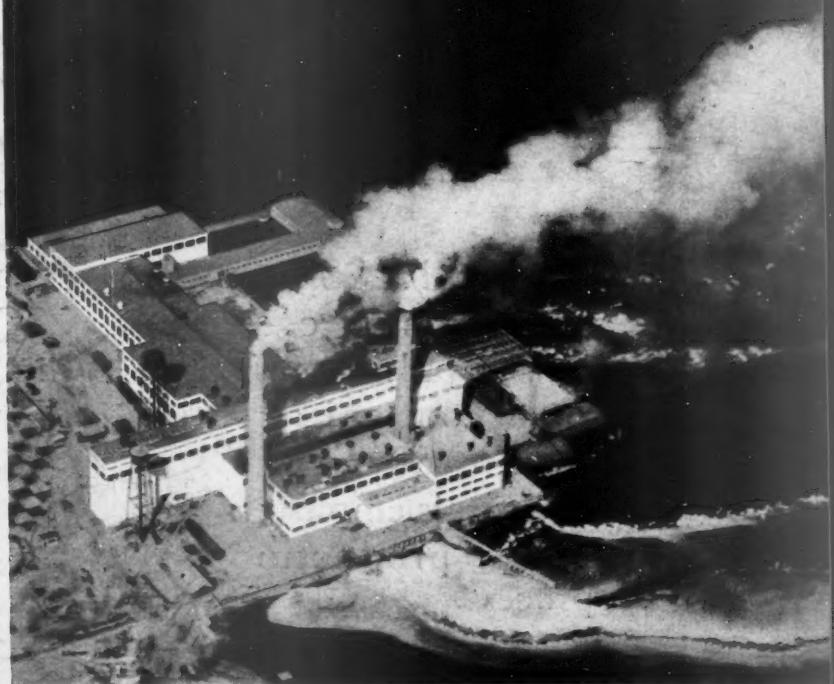
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MARCH
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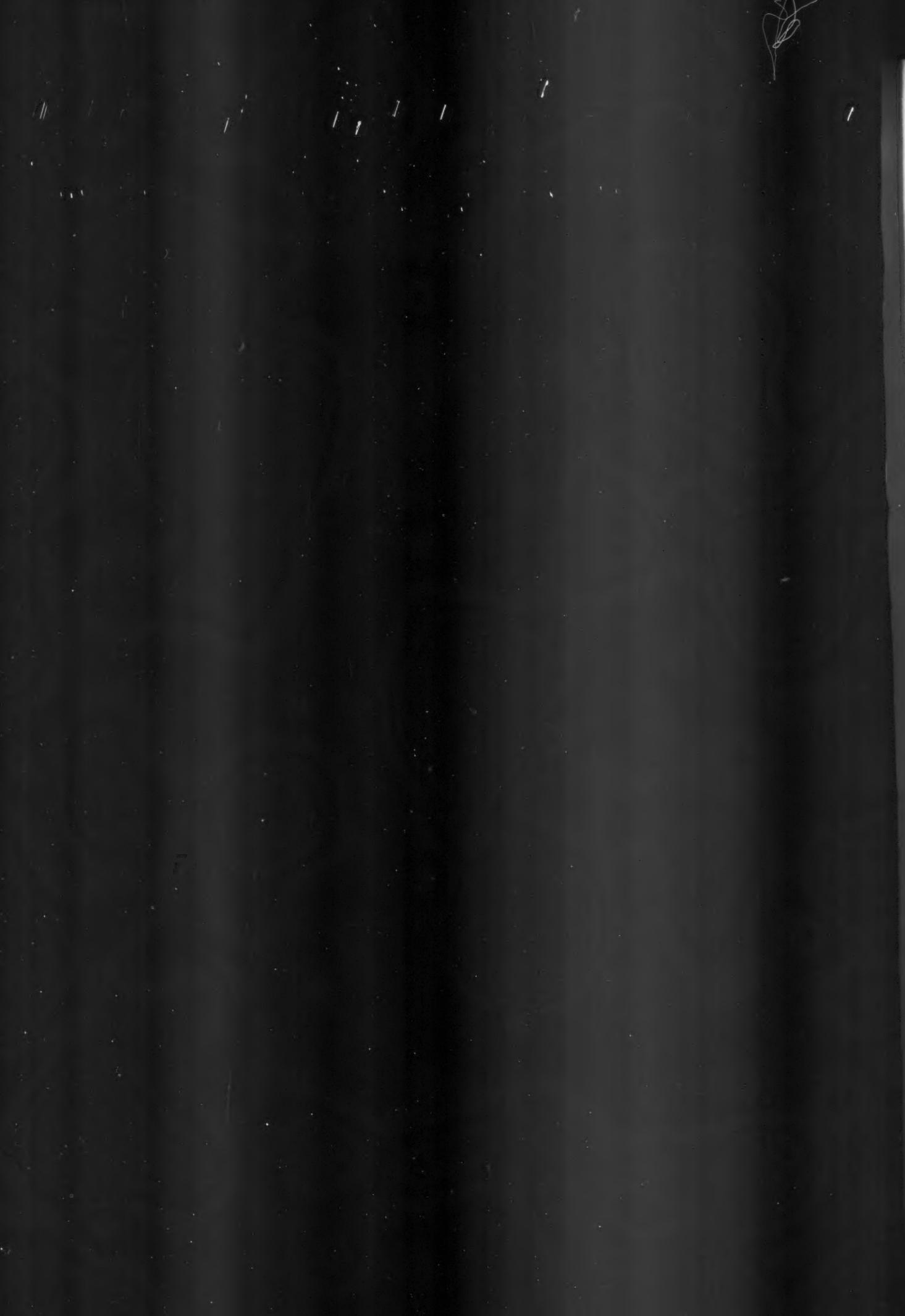
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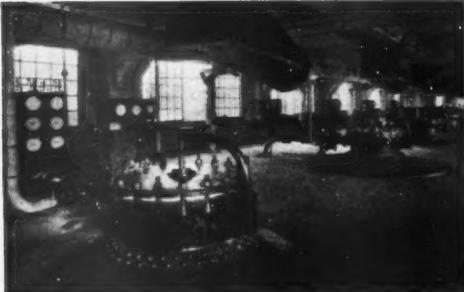
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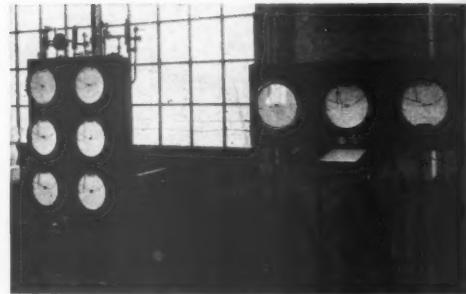


General View of Operating Floor, Digester House—Weyerhaeuser Timber Co. Pulp Mill—Longview, Washington.

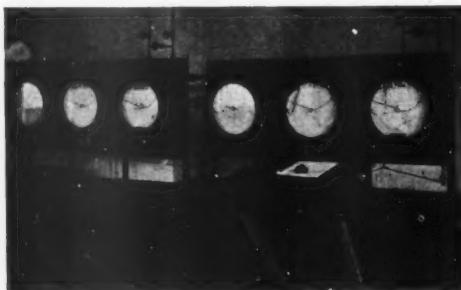
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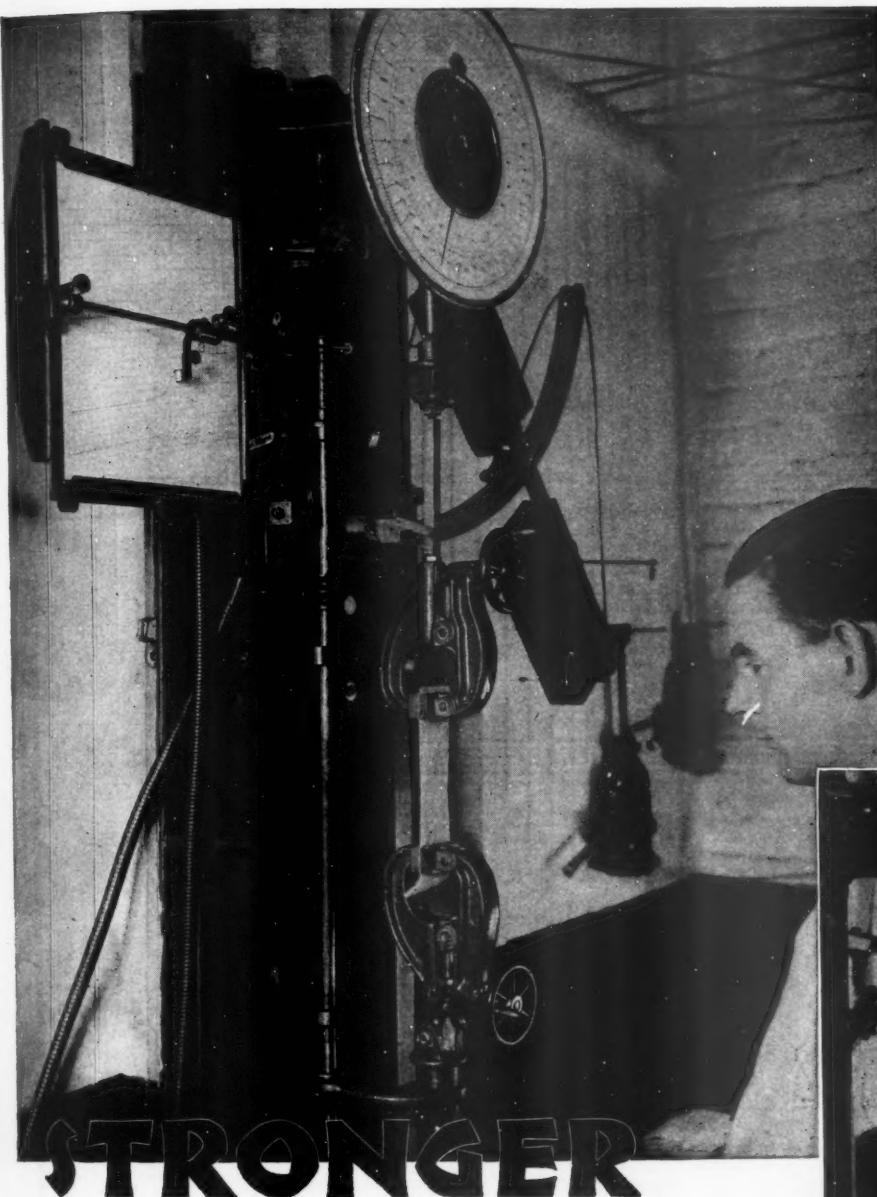
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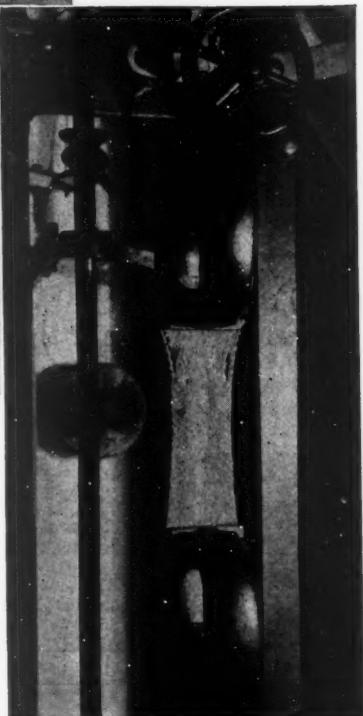
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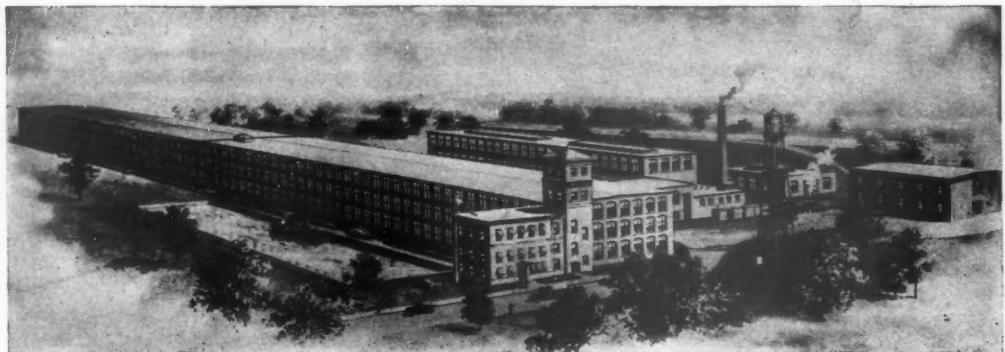
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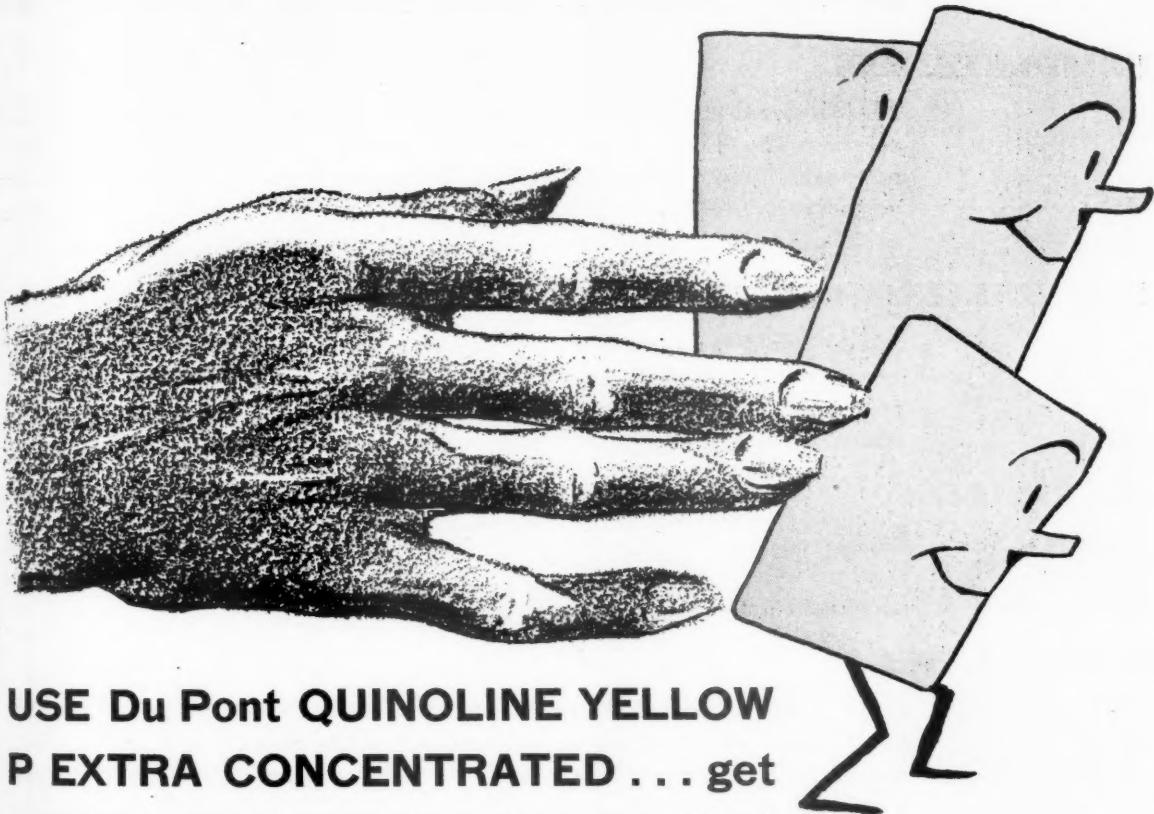
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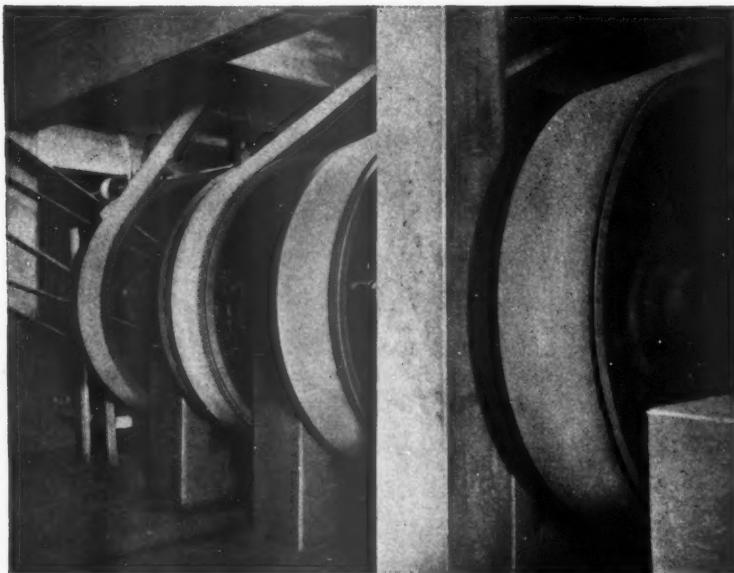
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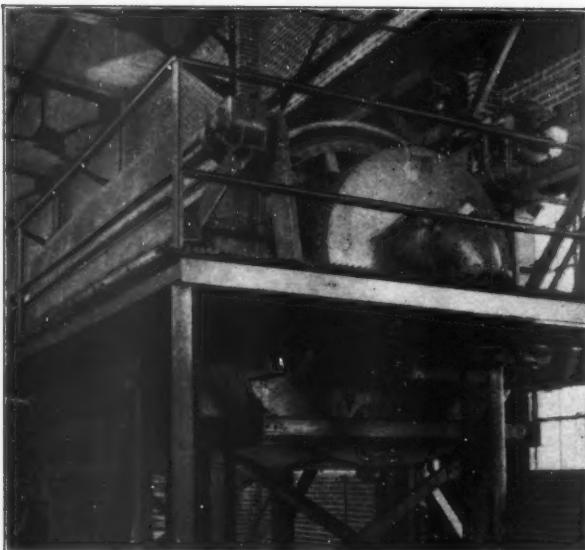
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Every pulp and paper mill man who looks beyond the chipper and pulpwood pile, finds a most important field of vision. Forests, lumber, these form the background of pulp and paper.

Keeping apace of developments in the lumbering field, as directly affecting your business, is well worth while. This can best be done by reading the leading lumber journal, West Coast Lumberman, each month. Subscription, \$3.50 per year, including the Annual Review. Foreign, \$4.00.

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FOR SOME MONTHS Great Western Laboratories have been doing experimental work on the use of chloramines for control of slime in pulp mills. The widespread difficulties caused by slime and slime bacteria make its control and elimination a vital consideration.



Slime bacteria usually enter the mill in the raw water supply, or in a stock supply where they may be present in the stock itself. The result is that they collect and grow everywhere: in filters, making frequent backwash necessary; in head boxes, where the slime breaks away to form spots on the paper and frequently cause breaks in the machine; on the wire causing blinding and frequently carrying through to the drier train. Slime particles prevent close formation among the fibers, the bacteria attack and decompose cellulose — and the results are weak stock, frequently with material shrinkage, and pinholes where the slime particles are broken down by heat in the drier train.

Chloramines are highly effective in killing slime bacteria, preventing growth, and controlling odors. It has always been the aim of Great Western Electro-Chemical

Company to keep pace with the Pulp and Paper Industry by meeting the Industry's problems with products and methods for their solution, and the presentation of Chloramines for slime control is simply another step in this policy. We shall be glad to answer inquiries with detailed information, and to assist in initial experiments and final installations.

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WITHOUT BENEFIT OF DUTY

*A startling tale of nonfiction
about the three leading imports*

IMPORTS of pulp and paper into the United States in 1931 exceeded in value by far the imports of any other commodity which is produced in commercial quantities by domestic industries. The full travesty of our emigrated pulp and paper industry is brought home in a staggering way in a brief study of the imports of leading commodities.

In 1931 the three leading commodities on the list of imports were, in the order named, raw silk, coffee, pulp and paper. The following little table will be helpful:

United States Imports of Leading Commodities

	1921-1925 average	1930	1931
Silk, raw	\$348,100,000	\$262,900,000	\$191,300,000
Coffee	205,800,000	209,500,000	174,900,000
Pulp and paper	157,900,000	212,900,000	173,100,000

Even at that, pulp and paper ranks a close third in the list of ALL imported commodities. The first two classes of imports really have no place in a comparison with the status of pulp and paper. It is safe to say that outside of a few experimental cocoons in a laboratory or museum here and there not a pound of silk is raised in all these broad United States.

It is without question equally safe to say that, barring a coffee tree here and there in some hothouse or botanical garden, not one bean of the 1,724,000,000 pounds of coffee annually consumed in the United States can lay claim to domestic origin.

Silk and coffee are two big consumption items that the United States does not produce, can not produce on a competitive basis due to highly favorable factors of climate and labor conditions possessed by the exporting nations.

It is important to note this significant point. Raw silk and coffee are both on the free list. When these two commodities are landed on American docks the customs men collect no tariff, but satisfy themselves with a counting of bags and bales for statistical purposes. It is quite proper that they are on the free list, because we as a nation collectively use tremendous quantities of both commodities and can not produce a nickel's worth with our own set up of soil, climate, and labor.

Our domestic labor loses no jobs by reason of the raw silk and coffee imports. In fact, thousands of jobs

are created for domestic labor in preparing these two commodities for consumption. Coffee has to be roasted, packaged and distributed. Raw silk has to be processed, spun, woven into fabrics, and made into garments. To perform all these operations requires thousands of workmen.

Raw silk comes in duty free, to provide these thousands of American workmen with the materials with which to work. But, have you ever consulted the tariff lists to see about bringing in silk manufactures? You will find that the free list ends abruptly with raw silk and that we have so constructed the nation's tariff walls as to secure for our native labor and industry the benefit of domestic manufacture. It is necessary to leap a very high tariff wall if you would bring in silk goods worked up in other lands with the advantage of cheap labor.

There is logic in all this, the way the tariff functions in the case of silk and coffee. Can it be said that equal logic applies to the tariff schedules that have been hung on our pulp and paper industry like an ill-fitting coat? Here we have an industry essential to the business and social life of the nation, a billion dollar industry. It is an industry that can supply its entire raw material needs from domestic sources. (The argument is confined to wood pulp papers, which make up the great bulk of the national paper consumption.)

Pulpwood is the backbone of raw materials for the paper industry. In tracing the origin of our present-day imports of pulp and paper it is found that the industry has emigrated to sources of pulpwood in foreign lands. Unlike coffee and silk, the case with pulpwood is not a lack of ability to meet requirements from domestic sources. Impartial bodies have shown repeatedly that the United States possesses ample pulpwood resources of its own to meet the full requirements of the paper industry in perpetuity. Nor is the timber in inaccessible, theoretical stands. It is commercially available.

There are many fallacies abroad regarding the sufficiency of our forest resources. There are many parrot utterings about conservation. These latter mumblings sometimes arise purely in ignorance, sometimes as propaganda. Whenever a man says that the United States has insufficient pulpwood resources of its own either he has failed to inform himself or he deliberately falsifies.

To answer then why pulp and paper imports should

PACIFIC PULP & PAPER INDUSTRY

lead all other imports of commodities capable of being supplied from domestic sources we must look to the tariff for an answer. First, let us break down the pulp and paper imports for 1931 as they are given in the preliminary figures issued by the Department of Commerce.

United States Imports of Pulp and Paper			
	1921-1925	1930	1931
Paper and manufac-		average	
tures (1)	\$105,200,000	\$147,500,000	\$125,600,000
Newsprint (2)	90,900,000	131,800,000	112,200,000
Paper base stocks (3)	94,200,000	106,900,000	75,200,000
Wood pulp (4)	67,000,000	81,100,000	60,900,000
Combined major groups			
(1) and (3)	199,400,000	254,400,000	200,800,000
Newsprint and wood			
pulp (2) and (4)	157,900,000	212,900,000	173,100,000

You will note that the combined imports of "paper and manufactures" and "paper base stocks" rank first in the list of imported commodities, BAR NONE. In 1931 the imports of these logically combined groups had a value of \$200,800,000, exceeding in value by \$7,500,000 the total value of imported raw silk, which has held the lead in the list of imported commodities for so many years that it feels entitled to the place as a matter of heritage.

The reason that the imports of "paper and manufactures" and "paper base stocks" were not used in combination in the first table of this article is because that combination does not reflect the true condition. The first grouping includes (in value) about 10% of papers and manufactures thereof, other than newsprint. The "paper base stocks" classification includes a minor quantity of other paper making materials, such as rags. Both of these minorities must be eliminated. Newsprint and wood pulp are both 100% products of pulpwood, and it is pulpwood that we are talking about.

To go back again now to the tariff schedules. Perhaps they will throw some light on why it is, that with ample domestic pulpwood resources, the nation's imports of pulp and paper exceed by far the imports of any other commodity which is produced in commercial quantities by domestic industries.

The "Statistical Classification of Imports Into the United States," with rates of duty, shows that one can import any kind of pulpwood, wood pulp, other pulp, or paper stocks, FREE. This revealing publication also shows that you can import newsprint FREE. But run down thru the long list of other papers and you can't find a blessed one that can get into the United States unless it hurdles a tariff of the kind that made Smoot and Hawley famous. Not one, not a — beg pardon, there is one. Just one. Way down the list is item 47810, duplex decalcomania paper, not printed, free. And half of us don't even know what it is.

Now if you don't mind going back to that first table once more you will see that when you have taken FREE newsprint out of the imports of "paper and manufactures" and have taken FREE wood pulp out of "paper base stocks" there isn't a great deal left. That ought to tell some kind of a story.

It does tell a story, namely, when you protect domestic manufacturers they can stay in business and maintain the higher standards of living for their workers that is part and parcel of the industrial system in the United States.

Is this a condition peculiar to the pulp and paper industry? It is not, except that the pulp and paper industry affords the biggest and best example of national foolishness. We've named the three leading imports for 1931. What of the others?

Fourth is cane sugar, import value in 1931, \$112,700,000, a tropical product thriving on peon labor.

Fifth is petroleum and products, import value in 1931, \$92,700,000. There have been loud protests lately for tariff.

Sixth is chemicals and related products, import value in 1931, \$82,700,000. Much of this group is not native to the United States.

Seventh is crude rubber, import value in 1931, \$73,800,000. Strictly a foreign commodity. (But rubber manufactures are highly protected by tariff).

Eighth, ninth and tenth are, respectively, fruits and nuts, furs and manufactures, hides and skins. Many are not native, but domestic varieties have some protection.

Eleventh is copper. The cry for protective tariff has been loud of late, and justifiably so, with the opening of cheap-labor, government-subsidized, foreign mines.

At this stage the writing may grow tedious and some may rise to inquire, "Well, what of it?" All this is what has happened? You can't do anything about it?"

Something can be done about it! There is less and less tendency among farsighted executives to view conditions as hopeless. There is a growing feeling that "something must be done about it!"

The serious part about this entire situation for the pulp and paper industry today is that the tide of pulp and paper imports is continuing to grow. In twenty years the American manufacturers have lost an annual business of more than two million tons of newsprint. The last half dozen years have demonstrated that few American manufacturers are able to hold their own on this grade. American manufacturers still make one and one-quarter tons of newsprint annually, but they will be forced to surrender this business to foreign mills if present conditions remain unchanged.

In giving up an annual business of 1,250,000 tons of newsprint these American mills will not simply fold up. There will be determined efforts to shift to other grades and, in consequence, the stability of the paper industry will continue to be jarred destructively right down the line.

Domestic producers of wood pulp today manufacture about 4,500,000 tons of wood pulp, but with a free market the volume of imports has been growing and in

"I have read with great interest your leading article '47,000 Jobs' in the February number of your magazine and I want to congratulate you upon setting forth this problem so forcefully and plainly."

E. M. MILLS, President
Rainier Pulp & Paper Co.

very recent years the position of the domestic producers in a free market has been growing more difficult. Pulp mills have been closed. Such closure means the disappearance of the pulpwood market. Those who are concerned only with the fleeting opportunity to buy cheap pulp in a free market entirely lose sight of the fact that a vanished pulpwood market means the extinction of a very important domestic payroll for wood cutting and a diminution of markets for finished paper.

To place those domestic producers in continuous hazard by withholding from them the tariff protection which the paper manufacturers—except newsprint—enjoy in copious quantities, is to pave the way for the time when the foreign mills will be able to dictate their own prices. And they will not be low prices.

The NEW YORK MEETING

**American Paper and Pulp Association
holds its 55th annual convention**

ASIDE from the routine reports and a number of instructive addresses there were some significant developments at the fifty-fifth annual convention of the American Paper & Pulp Association held in New York in February. Attendance was smaller than it has been in the years immediately preceding, but feeling was more intense due largely to the critical situation now facing the industry.

One highlight of the session came about on Thursday, February 18, the closing day, when George W. Sisson, Jr., president of the Racquette River Paper Company of Potsdam, N. Y., and a former president of the association, abruptly walked out of the meeting following the defeat of a resolution sponsored by him. The effect was rather electrical, not alone at the meeting, but in the industry in general when the news went about.

Mr. Sisson's resolution was so framed as to have "the American Paper and Pulp Association express its full sympathy and accord with efforts under way to correct the deplorable situation in American industry resulting from the present dislocation in international finance and urges participation and support by our industry in such studies and such effective legislative action as will assist in the restoration of stability to American industry." The resolution was intended to be in support of the Hawley Bill, soon to be considered by Congress, which would levy countervailing duties on all imports from countries where exchange was depreciated.

Mr. Sisson delivered a stirring plea in support of his resolution. He pictured conditions of unemployment which had been brought about by foreign competition in his own town of Potsdam where his company manufactures both pulp and paper.

The general manager of the association, Jesse H. Neal, interposed remarks from the chair and opposed the resolution on the ground that it would widen the rift within the organization which has been developing over differences of opinion between domestic pulp producers and the "converting" mills. Mr. Sisson objected to Mr. Neal's remarks as "unethical" and gave warning that an adverse vote on the resolution would necessitate withdrawal from the association.

The vote was taken and only one hand showed with Mr. Sisson's in support of the resolution. Whereupon Mr. Sisson arose, put on his hat, said, "Thank you gentlemen. Good afternoon," and walked out of the meeting.

President S. L. Willson of the association displayed a broad gauged view of national industry when, in his annual address, he remarked, with reference to the dis-

turbing effects of attempting to compete with nations off the gold standard, that "not only the paper industry, but industries of all kinds are affected. It is a problem that should be considered from a national standpoint rather than for its effects upon any part of our own industry."

With reference to the pending legislation that is intended to equalize competitive conditions with off-gold-standard countries, President Willson remarked, "The measure is protection to labor, prices and commodities, and in my opinion has merit."

Grumblings of dissatisfaction with the association as presently constituted have been somewhat frequent of late and the competitive crisis precipitated by foreign producers upon those manufacturers within the industry who have no tariff protection has served only to sharpen the difference of opinion which apparently came to a head at the convention. This cleavage has brought forth suggestions for a separate organization that would provide more adequate consideration for the purely domestic producers.

It is possible under the circumstances that action will proceed along one of two lines: the formation of a separate association or a realignment of forces within the present body. At this writing the second solution seems quite probable. Reports have been received of a more determined stand for the welfare of self-contained domestic manufacturers under the leadership of strong executives.

President Willson has shown himself personally to be solicitous for the welfare of the industry as a whole. In speaking at the convention he indicated that the association had an opportunity to increase its effectiveness by providing more adequate representation in association activities to important branches of the industry not now so favored. Further pointing to the desirability, particularly in times such as the present, for strong organization President Willson said that an extra endeavor would be made to sell the benefits of the parent organization to many who in the past have been indifferent to them.

Reduced activity in the industry has imposed additional financial difficulties upon the association, the president said, and steps were now in process to cut the cloth to fit the purse without sacrificing utility.

The fifty-fifth convention passed resolutions as follows:

Paying tribute to the deceased.

Approving the work of the Timber Conservation Board and urging its continuance and cooperation with it.

PACIFIC PULP & PAPER INDUSTRY

Opposing reduction of the Forest Products Laboratory budget for the Paper Division.

Urging better group cooperation and harmonizing of opinion differences.

Opposing H.R. 8909, the intent of which is to require government contracts to be filled with materials wholly of American origin.

Expressing appreciation of loyalty of staff.

Officers of the association remain unchanged until the next election, to be held in 1933.

An interesting program of papers and discussions was carried out at the several general and divisional meetings. Two papers of more than usual interest were



R. A. McDONALD
Crown Willamette
Paper Company
Named on the
Executive Committee
of the new
"Sulphite Institute"

delivered by Folke Becker of the Rhinelander Paper Company and Charles W. Boyce, secretary of the American Paper & Pulp Association, respectively.

One West Coast executive represented in the convention was George W. Houk, member of the Executive Committee, and executive vice-president of the Hawley Pulp & Paper Company, Oregon City.

Mr. Houk was also elected a member of the executive committee of "The Sulphite Institute" which was organized during the convention by the sulphite paper manufacturers, representing 23 mills having a daily production of 1600 tons. R. A. McDonald of the Crown Willamette Paper Company was also elected to this newly formed committee.

Ossian Anderson, president of the Puget Sound Pulp & Timber Company, who was to have discussed West Coast conditions in the convention symposium on current conditions of pulp manufacture, did not appear as he was called back to his Everett offices during the week.

Harold Zellerbach Attends Eastern Meetings

H. L. Zellerbach, president of the Zellerbach Paper Company, is expected to return to his San Francisco home in March from an extended eastern trip, during which he attended the convention of the National Paper Trades Association in New York February 15-17. Mr. Zellerbach is acting president of the Pacific States Paper Trade Association and represented that body at the national meeting. He also was present at the annual sales meeting of the Linweave Company and the S. D. Warren Paper Company.

Teren Sees Bright Future for Coast

Nels Teren, new vice president in charge of production for Oregon Pulp & Paper Company, Columbia River Paper Company, Leadbetter operations in the Pacific Northwest and California, is happy to be out West. The country is not new to him, as he had supervision of the Tacoma mill for St. Regis Paper Company,

having charge of kraft operations, and before that supervised papers made on the Pacific Coast for Bates Valve Bag Company. He has been getting out here several times a year.

Mr. Teren told PACIFIC PULP & PAPER INDUSTRY that he believed the Pacific Coast would not only hold its own in the pulp and paper battle of progress but would also gradually replace some of the obsolete tonnage in other sections of the country.

"You have everything here," he said, "raw materials, power, railroads, shipping, cheap wood. The Pacific Northwest gives all promise of becoming the most successful part of the United States in the paper trade. You have mills here that are far ahead of the Eastern mills. The new Weyerhaeuser mill is certainly well planned."

Mr. Teren does not think that the Pacific Northwest is going to be forced out of newsprint production by foreign competition. If the currency of foreign pulp and newsprint producing countries continues to be depreciated he believes that a tariff to equalize the exchange must and will come. With such protection the Pacific Coast producer will be able to compete.

Newly arrived from the East and well acquainted with conditions there, he thinks that the Pacific Coast paper industry as a whole is in much better condition than the Eastern industry.

"The main thing to look at," Mr. Teren says, "is the cost of raw material. Whereas in the East you have to pay \$15 or better a cord for the best grades of pulp wood, here you can buy excellent grades for \$5.50 a cord. I do not see for the West Coast anything but the brightest prospects for the future."

The new production chief had no announcements to make as yet about any contemplated changes. He is working to improve the products of the Leadbetter mills as much as possible and to reduce manufacturing costs. Probably some other grades of paper will be developed, he said, but that will be in the future.

Mr. Teren said that for the present no new machines were to be installed at Salem or Vancouver, as reported currently. Some additional calendars had been brought from the idle Tumwater Paper Mills for the Vancouver mill No. 2 machine to improve the product and some other minor changes have been made, but no major improvements are yet in prospect, Teren said.

DISAPPROVED

Resolved: That the American Paper and Pulp Association expresses its disapproval of H. R. 8909, a bill to compel contractors on government works to give preference to materials of local origin, and further to limit purchases by government departments to materials of domestic origin.

Fir-Tex Plant Resumes Work

Fir Tex Insulating Board Company resumed operations at St. Helens plant March 1, after a long idleness, running three shifts six days a week. One hundred and twenty-five men were put to work, according to A. E. Millington, manager. The mill has work enough on hand for one month's operation, and the management expressed the hope that enough additional orders would be received during March to continue for a longer period. Mr. Millington said that no large individual orders had been received to warrant the resumption, but that stocks on hand were low.

THE SQUARE DEAL

By FOLKE BECKER, General Manager
Rhineland Paper Company

IT IS probable that if a poll were taken today of paper and pulp manufacturers in the United States asking opinions as to the condition of the business over the past year and prospects for this year, that a large majority would answer that there was no business and there are no prospects. The twin spirits of satisfaction and optimism are noticeably absent from our midst. If one of our number grins courageously and utters a few words of cheer and hopefulness, the rest of us are inclined to dismiss his pollyanna vaporings by muttering Mr. Shakespear's observation that "it is a tale told by an idiot, full of sound and fury, signifying nothing". In my own case I have found it to be just one damned thing after another. I am not qualified to speak for every branch of the business perhaps, but I do know that a large part of it is not operating on a profitable basis. That much will probably be generally conceded.

It is tempting to spend a little time musing on the questions that the general economic depression suggest. Here is a nation of a hundred and twenty millions, untouched by war, unscathed by pestilence, unharmed by any great disaster, possessed of all or more than all of the real wealth and resources that it had two years and a half ago. Things were not perfect then but it can't be denied that there was an air of prosperity and content, even if it was surcharged a little with hysteria. Now we seem to experience a sort of morbid satisfaction in wallowing in a veritable morass of discouragement. Our leaders are exhorting us to be brave, to fight off despair as if we were engaged in a desperate campaign against a powerful and implacable enemy bent on destroying us. In the name of sanity what has caused this change? Why this loss of faith in ourselves and confidence in the future? Some one wiser than I will have to answer.

Leave it to the philosophers and economists. Practical business men anxious to get their plants into profitable operation cannot afford to spend much time speculating on remote causes but if we are going to get anywhere in correcting this unpleasant condition, do anything more than merely stagnate until something turns up or a lot of us are turned under, we must do a little thinking about the situation.

We all have a pretty good idea of the importance of cooperation. Our customs, rules of conduct, business associations, etc., are evidence of the part cooperation plays. In a broad sense as citizens of this Republic, we

all cooperate with each other though our opinions may differ very radically on politics, religion, social and international relations, etc. We all pay taxes to support the government, observe numerous laws and regulations, accept money that we have cooperatively agreed shall be a medium of exchange in lieu of actual goods and do many other things that we find to be for the mutual benefit of all of us. We could not live as civilized human beings without cooperation. More than that, experience teaches us that we are all pretty well hooked up together for good or ill. Certainly if we have learned anything from this depression, it is that failure and adversity seem to be just as contagious, just as capable of spreading their devastating effects as success and prosperity.

Recognizing this, it does not behove any of us regardless of how pleasantly we may, for the moment, be situated to sit back, refuse to cooperate and fancy ourselves secure in the belief that contamination will not reach us. Those who are willing to let the devil take the hindmost often find themselves in that gentleman's clutches. I do not think that we as paper and pulp manufacturers do cooperate as fully and effectively as we could for the benefit of ourselves and the rest of the country. I do not mean by this that we should necessarily engage in price fixing agreements or subterfuges leading to that end but I do believe we could well afford to take a little broader gauged view of the matter than we have in the past.

To bring it down to cases consider the pulp manufacturer in the Lake States, particularly in Wisconsin, my home. Most, if not all of them have cut wages, salaries and all reducible overhead to the bone. They have slashed the price of pulpwood until it is pretty generally admitted that producers can make little or nothing in disposing of it. Still it is found that now due to the depreciation of the currency in which foreign importers are paid for their pulp that it is possible to buy that product on the seaboard and freight it out there for less money than our cost of manufacture.

That is a demonstrable fact. It can be readily dismissed for the time being by saying that it is too bad that the middle western mills are so unfavorably located. That would represent the spirit of non-cooperation. If it prevails and it may prevail temporarily, it will mean the closing down of numerous Wisconsin, Minnesota and Michigan plants, it will involve the economic waste incident to idle machinery and equipment, it will put thousands out of work that are em-

PACIFIC PULP & PAPER INDUSTRY

¶ Here is a nation of a hundred and twenty millions, untouched by war, unscathed by pestilence, unharmed by any great disaster, possessed of all or more than all of the real wealth and resources that it had two years and a half ago. Today our leaders exhort us to be brave, as though we were engaged with an enemy bent on destroying us. Why?

¶ We can not keep on throwing American labor and American capital out of work and stimulating foreign industry, without having the evils of such a policy come right back home to roost. It will pay us all not to forget that.

¶ It is certain that we cannot continue to sell our goods at a profit to people who are paid barely enough to allow them to eat.

¶ It is much better for present purchasers of pulp to join in advocating some protection for domestic pulp manufacturers than to force disaster on this branch of American industry and leave the market later on at the mercy of foreign producers.

¶ It does not behoove any of us, regardless of how pleasantly we may for the moment be situated, to sit back, refuse to cooperate, and fancy ourselves secure in the belief that contamination will not reach us.

ployed directly and other thousands that are indirectly engaged in the business. During 1931 in Wisconsin alone, according to the Paper Trade Journal 3,675 people were engaged in the industry and the business done amounted to over thirty-six millions. It will naturally entail some hardship for middle west paper manufacturers of which I am one who are making their own pulp. Far outweighing those considerations in importance, it will be a mighty bad thing for this country and there isn't an American manufacturer anywhere who can escape the bad effects of it. Some may not feel it at first and others may not recognize it when they do feel it but everyone of them is going to be adversely affected. We cannot keep on throwing American labor and American capital out of work and stimulating foreign industry, without having the evils of such a policy come right back home to roost. It will pay all of us well not to forget that.

Pulpwood producers in Wisconsin last year, according to the closest estimate I could obtain, produced in the neighborhood of 380,000 cords of wood in spite of increasing use of foreign pulp. The money received by these people went largely for the purchase of American goods, payment of American taxes and to swell American reserves of capital. I have not the figures for Minnesota and Michigan but it is safe to say they would exceed those of Wisconsin. A large percentage of the labor involved is manual. It is not a kind that can readily be supplanted by machines. It is the kind of economic back-log that the country needs just now when we are trying to adapt ourselves to the introduction of labor eliminating machines in so many lines. We cannot afford as citizens interested in the security and development of the United States, either to eliminate that kind of labor or to pay it penny pinching wages. I am not a sled length subscriber to the doctrine that high wages regardless of profit, must be paid to maintain prosperity but it is certain that we cannot continue to sell our goods at a profit to people who are paid barely enough to allow them to eat. There is a medium of mutual cooperation right there that we should all strive to reach.

I know most if not all the counter arguments. It is a poor time to increase the cost of commodities to the consumer. I consider that a lot of bunk, if you will

excuse the expression. I am not going into my reasons for making that blunt statement for you know it is so. It may be good politics to take such a position but it isn't good sense. It will be said that by establishing countervailing duties we will offend foreign nations and encourage them to retaliate by levying high duties on our exports. My answer is that our good friends across the water are putting on all that the traffic will bear now. We will simply continue to ship them more and more gold if we buy their products, whether we insist on equalizing our respective currencies or not.

This will continue until such time as these countries understand that the United States is practically self-contained and self-supporting and as a whole, is not going to be hurt by unfair retaliatory measures on their part. They will find that our markets are far more important to them than theirs are to us. We want to get along and be friends with everybody but we are going to get along regardless. There are some other little matters along this line such as the supposed adverse effect on our forests that I would like to take up but I have already run the risk of tiring you out and I am going to walk right up to and attempt to step over the main stumbling block and then sit down. I hope to be diplomatic enough not to fall down.

The great difficulty to be overcome in our attempt at cooperation is — well I won't call it selfishness for I am selfish and like Edmund Burke, I do not know how to draw an indictment of a nation or of humanity — is the attitude of those who are deriving a profit by buying semi-manufactured material with depreciated currency and selling their product in a generally well protected country for good gold dollars, the prime-standard of value in this world. I hope we may keep them so.

In attempting to get publicity for our difficulties, we have met with a strange lack of interest in our human interest story by large metropolitan newspapers. That may be due to our lack of skill in presenting the matter or it may be due to the understandable reluctance of a business man even if he owns a newspaper, to risk easing himself out of the opportunity of buying his newsprint with depreciated currency.

That is in the realm of pure conjecture. Maybe we need a publicity agent or a good story writer. Certainly there are broadgauged newspaper men who will not let consideration of a relatively small profit prevent them from presenting this thing in its true light.

Paper manufacturers who purchase all their pulp for conversion, will be more or less directly and adversely affected by the imposition of duties such as those provided for in the Hawley and Beedy bill. Most of them, I believe, realize that the present condition cannot long continue in any event and that it is much better for them to join in advocating some protection for pulp manufacturers than to force disaster on this branch of American industry and leave them later on, at the mercy of foreign producers.

I hope—more than that—I feel confident that our association which has heretofore met and solved greater difficulties than this, will put itself fore-square on record as favorable to equal protection for all branches of the industry. As Americans committed to the general policy of protection, we can do no less than that. We must sink local prejudice, we must raise again Roosevelt's great rallying cry, "The Square Deal", and regardless of immediate considerations, be guided by the lode-star of fundamental principle. More prosperous times are coming. We can hasten their arrival by eschewing thought of temporary advantage, by playing the game together according to the rules and holding the welfare of the country above that of private interests.

CHIPPER KNIVES

A Profit and Loss Consideration

By JOHN E. HASSLER, Portland
Simons Worden White Company



BECAUSE machine knives show up as a very small item on mill production cost sheets there is a definite tendency to underestimate their importance as a contributing factor to operating efficiency. In the pulp and paper industry the purchase price of knives is comparatively small, but analysis will show the mill executive that proper selection, grinding, and setting of knives is a matter of major importance bearing impressively on the subject of profit or loss.

Of all knives used in different departments of the industry chipper knives are no doubt the most important. It is out there in the wood room that a long start can be made toward profitable operation. Good chips are as important to the making of good pulp as a good foundation is necessary for a durable building. Intelligent handling of the knife item means the production of good chips.

Chipping plant troubles and problems are many. The writer hasn't solved all of them, by any means, but an extended study of chipping plants in most of the Pacific Coast mills and a genuine interest in experimental results has developed certain conclusions.

The performance of a chipper knife is directly or indirectly affected by several important factors, as follows: steel of which the knife is made, temper, grinding, bevel of the cutting edge, angle of the knife with relation to the face of the rotor, speed of the rotor, and the vibration caused by excessive end thrust in the rotor shaft. These points will be discussed in more detail in succeeding paragraphs.

Extensive experimenting in the use of alloy steels on the part of knife manufacturers, particularly within the past year, has brought on the market knives that are much tougher and hold an edge better than ever before.

The item of temper is of peculiar importance to Pacific Coast mills. The first impulse is to regard Western wood as easier to cut because it is softer, but this is only true in part. While the body of the wood may be softer, there are large hard knots that must be handled by the knife edge simultaneously. In the Eastern wood there is not so much disparity in resistance to a cutting edge between the knots and the body

wood. As a matter of fact, where the latter is hard it tends to brace the cutting edge of the knife against the shock of striking hard knots, whereas the soft body wood in the Western species does not give as much of this protection. This condition has made it necessary to use a slightly softer temper in knives used on Western woods.

Many chipping room troubles can be traced down to the grinding, but too often the cause has been sought elsewhere. Whether to grind wet or dry is of small matter. Good results are obtainable with either method, but, when grinding wet, don't be sparing on water. When grinding wet, care must be taken to direct the cooling liquid at the point where grinding wheel and the knife make contact, not to one side. If the water is not right on the grinding spot all the time a bit of grease or other foreign matter on the knife may keep the cooling liquid from the face of the wheel for an instant, long enough to raise the temperature of the steel and develop a check in the metal when the cooling liquid again comes in contact. A soft, coarse grinding wheel is to be preferred, even tho it might not last as long as a harder wheel. A wheel that is too hard, or too fine, or both, requires very careful supervision on the part of the grinderman, and can easily ruin the knife.

There have been yards and yards of discussion on the subject of proper knife bevel. Shall it be single or double bevel? At what degree shall we grind? The subject presents a real problem, and has brought out many ideas as to solution. Perhaps there is no agreement yet in the industry, but cold analysis of results develops certain conclusions that are hard to refute.

The single bevel on the cutting edge is now quite generally used. It appears to do a better job of breaking up the chips, eliminating the necessity of passing an excess volume of even length chips over the screens and back to the rechipper. It is possible that the single bevel may require slightly more power than a double bevel, but this can hardly be an objection, as the extra power would in any event be employed in operating the rechipper.

There is a great deal of difference of opinion as to the proper speed of the chipper rotor, spout and bed knife angles and designs, and so much difference in texture and size of pulpwoods, that it is virtually impossible to lay down any flat rule for the angle at which

the knife should be set with relation to the face of the rotor. It is of prime importance to recognize fully these variables. The necessity for making a thorough study of individual wood room conditions is obvious if operations are to be brought down to maximum efficiency and lowest cost.

Of course, the greater the speed of the chipper rotor, the more easily the chips are broken up. On slow speed chippers one has quite another set of factors to consider in arriving at the best practice for knife bevel, angle of set, etc.

There has been quite a little pressure to make knife edges thinner. This has been supported by a belief that the thinner edge would do a better job of cutting all around. In a measure this is true, and benefits can be found in that direction, but it is important not to lose sight of the practical side and to realize that in reducing knife edge thickness there are certain limits beyond which we can not go without inviting disaster. The cutting edge that seems to be giving best all 'round results now has a bevel of 38 degrees. While a slightly thinner edge than this could probably be used with fair success, particularly in low speed chippers, the 38-degree bevel is so close to the zero mark where the edge will give away in hard knots that, when going to higher chipper speeds as is now the Pacific Coast tendency, it is well to play safe and not go below 38 degrees.

In very high speed chippers it may be found that considerable dust develops when using the single bevel knives. This is caused by the chips striking the housing or frame of the chipper at too high velocity. When this condition develops it is well to use the double bevel, making the first bevel, or the one nearest the edge, 38 degrees and about $5/16$ inches long, this to protect the cutting edge, then experiment with the second bevel until it is found that there is a minimum of dust and yet the chips are well broken up. A second bevel of 30 degrees is a good one to start with in experimenting.

Study has also shown that the 38-degree bevel will produce good uniform chips with a minimum of dust when the proper speed and knife angle, with relation to the face of the rotor, have been worked out. This can only be done thru study of local conditions and experimenting.

Sometimes disaster with the chipper knives comes about thru faulty reasoning. For example, it is assumed that the chipper is to operate at a certain speed, and the knives are to be set at a certain angle with relation to the face of the rotor. With these two conditions assumed as constants the knives are then ground with a bevel that appears to give best results under these conditions. Perhaps the operations are guided by standards that were evolved in some other wood room where good results were obtained. Despite all seeming carefulness, there is disaster. Why?

My suggestion is that in such a case we reverse the ordinary program of reasoning. Knowing that 38 degrees is a safe minimum bevel for the cutting edge, and is satisfactory in other respects, start with that bevel and run the rotor at speeds which seem advisable. Then, by using wedge shaped shims, experiment with the angle of the knife with relation to the face of the rotor. Set them finally as straight with the face of the rotor as is possible without causing the wood to be kicked back up the spout as the knife passes thru. When the wood kicks back, the next knife in rotation doesn't get a square bite. The result is too much useless dust.

This point suggests the subject of spout angle. There is little question that, for greatest efficiency, there are definite relationships between rotor speeds and spout angle.

Bed knives should be kept sharp and there should be a small clearance from the cutting edge down, to avoid any extra strain on the chipper knife edge while passing this point. In other words, avoid any wedging of wood between the end of the bed knife and the side of the rotor knife. Wedging causes the knife to heat unnecessarily.

A small portable grinder will be found very useful, timesaving, and inexpensive for keeping keen edges on the knives. Keen edges pay unseen dividends. The portable grinder is easily held in one hand, leaving the other hand free to guide the wheel. In this way the knives can be sharpened in about one fourth the time it takes to file them. A stroke on each side of the knife with a hand stone will remove the wire edge after grinding, and leave the knife in as good condition as it was when it left the grinding room.

There is, of course, a limit to the number of times a knife can be ground in place in this manner. The method should not be considered as a means for reducing the number of knife changes. Dull knives always make dust because they jar the wood too much as they pass thru. Besides, dull knives eat up power.

There is another very important point that is frequently overlooked. It is the matter of setting each knife out with the cutting edge exactly the same distance from the bottom of the recess in the rotor. Any difference in setting will cause some knives to be closer to the bed knife than others. The knives which have too much clearance will rock the wood unnecessarily and make shims and shives.

Proper adjustment here is mostly a case of the human element. The man who changes the knives is usually in quite a hurry. He has with him a box of shims and in his haste chooses out of his box by guess and slaps them in. When the rotor is turned to set the bed knife it is then too late to think about holding up operations while the shims are changed.

There is a simple and effective remedy for this difficulty. It consists of drilling and tapping a hole in the back edge close to each end of the knife. When the grinderman takes the knives off the grinder he fastens shims of the proper thickness to the back edge by means of countersunk screws. The grinderman doesn't hold up operations in doing this shim job exactly as it should be, and when the knife setter goes into action he can work much more quickly and precisely. His measuring has been done for him. Under this simple system each knife, as it goes to the chipper, is always exactly the same width as when new. The system ends the difficulty of varying clearance between rotor knives and bed knife, improves operations and makes for longer knife life.

Another source of serious trouble is end play in the rotor shaft. This should be cut down as low as possible, allowing only tolerance enough in the thrust bearing to avoid heating. If excessive end play exists the knife will not go straight thru the wood, and undue strain and jar will be produced against the side of the knife edge, causing it to chip out.

Comparatively, it's a small item, this item of chipper knives. But it's an important item, and right or wrong handling can often spell the difference between profit and loss.

Returned Your Questionnaire?

"The questionnaire sent out by Mr. Ralph B. Hansen, chairman of the Pacific Section of TAPPI under date of February 22nd, has been returned by a great number of the TAPPI members properly filled in to show their interest in the various subjects outlined. There are, however, a number of members who have not returned the questionnaire and the convention chairman is having difficulty in making the final tabulation of replies. Everyone who has received this questionnaire is urged to return it immediately so that the convention committee may be properly guided in its work of organizing the convention to suit the majority's desire of the membership.

"If the questionnaire has been mislaid, an additional one will be mailed upon request, or just drop a note in the mail with your suggestions."

RAY SMYTHE,
Chairman in Charge of Spring Meeting.

301 Park Bldg., Portland, Ore.

TAPPI Getting Ready for Portland Meeting

"The general plans for the Spring convention of TAPPI at Portland on May 6th and 7th are well under way," reports Chairman Ralph Hansen. "Response to questionnaires show the membership to be keenly interested in coming to Portland and actually doing two days of good work for the benefit of TAPPI.

"As two days will be devoted to the work it has been decided to ask the leaders of TAPPI and their friends to take part in any social activities in connection with the meeting. It is tentatively planned to have a banquet on Friday evening, May 6th, for men and their ladies. Opportunities will be given them for enjoying some high-class entertainment and also for the members to express themselves briefly on any subject from golf to foreign exchange. This banquet will serve as a means of getting everyone acquainted and the spirit of good fellowship developed to the nth degree.

"The lack of acquaintanceship between the members has resulted in the past in a feeling on the part of some members that they are sitting on the outside looking in rather than actually participating in the convention.

"The program will be so arranged that there will be several hours for an open forum discussion of the subjects discussed or the questions asked by the members as outlined in the questionnaire. This part of the program will really bring out the best thoughts of the membership and allow a more or less general discussion of those problems uppermost in the minds of the operators. The question box idea alone is going to provide one of the most interesting parts of the program and from the wide diversity of subjects it is reasonable to believe that everyone attending this convention will actually take away from it something of tangible value to himself and his company.

"While there has been a certain amount of pessimism in the industry generally on account of business conditions, this attitude seems to be changing and everyone is in a more hopeful frame of mind. It is hoped that by convention day business will have improved so much that the TAPPI organization will be glad to be together, all pulling in the right direction for improved quality and the upbuilding of this section of the country.

"The success of TAPPI depends upon the active participation of each member in these conventions. This is going to be a serious one. There is going to be a place for social activities, for recreation and relaxation

but the predominating idea behind this program is to do some constructive thinking. Of course, the old adage of 'All work and no play makes Jack a dull boy' cannot be overlooked. Members who bring their wives may be assured that the ladies will be taken care of by a committee arranged for this purpose. The full details of the convention will soon be ready. In the meantime, let's whoop it up and see if we can't make

RAY SMYTHE

has been appointed
General Chairman
in charge of the
Spring Convention
of Pacific TAPPI



this organization one of which we are proud and one which is helpful to us and a power in the industry. It takes the cooperation of every member to accomplish the results which we hope to obtain."

The chairmen of the TAPPI committees are asked to have their reports ready for presenting to the convention committee well in advance of the meeting. The committees and chairmen are as follows:

Management Methods, R. B. Wolf; patents, T. J. Geissler; waste, R. J. Schadt; heat and power, H. W. Beecher; materials of construction, S. Geijsbeck; fibrous raw materials, W. F. Goldsmith; fibrous materials testing, V. P. Thorpe; pulp testing, H. K. Benson; preparation of fibrous material, N. W. Coster; mechanical pulping, E. P. Ketchum; alkaline pulping, Ralph Reid; acid pulping, E. A. Weber; paper manufacture, B. T. McBain, and new equipment and application, Ray Smythe.

Ben Larrabee Named on TAPPI Executive Committee

Ben T. Larrabee, superintendent of the recently completed 175-ton bleached sulphite pulp mill of the Weyerhaeuser Timber Company at Longview, Washington, was placed on the Executive Committee of TAPPI at the annual national convention of that body held in New York in February.

Following is the complete list of new officers and committeemen:

President, Allan Abrams, Marathon Paper Mills Company, Rothschild, Wis.; vice-president, C. C. Heritage, Oxford Paper Company, Rumford, Me.; secretary-treasurer, R. G. Macdonald, 370 Lexington avenue, New York.

Executive Committee: Allen Abrams, chairman; C. C. Heritage; M. A. Krimmel, Hammermill Paper Company, Erie, Pa.; G. S. Holmes, Brown Paper Mill Company, West Monroe, La.; R. A. Hayward, Kalamazoo Vegetable Parchment Paper Company, Parchment, Mich.; W. S. Kidd, E. B. Eddy Company, Ltd., Hull, Que.; B. T. Larrabee, Pulp Division, Weyerhaeuser Timber Company, Longview, Wash.; G. N. Collins, International Paper Company, New York; W. O. Johnson, Strathmore Paper Company, Woronoco, Mass.; J. H. Slater, Escanaba Paper Company, Escanaba, Mich.; J. F. Rhoades, Mead Corporation, Chillicothe, Ohio; R. G. Macdonald, New York.

WELDED PRESSURE VESSELS

*Apply the A. S. M. E. Code efficiently
when buying this type of equipment*

A THORO understanding of the new A. S. M. E. Welding Code means money in the cash drawer for most pulp-paper mills, as well as many other process industries.

The majority of pressure vessels used around the pulp-paper mill, even including rotary and stationary digesters, comply with the requirements of the new A. S. M. E. Code, when built in accordance with the rules for construction under Class 2. When so constructed, many such vessels need not be stress relieved and Xraying of welds is not required in any case.

In the past some purchasing engineers have been confused with reference to the proper interpretation of the various "classes" set up in the Code, owing to the fact that progressive numbers are used in designating the different classes of vessels, for example, Class 1, Class 2 and Class 3. It is just a bit misleading, because of the possible interpretation of different qualities according to the respective Class numbers. The Code "Classes", as I understand them, are solely a method used in describing the recognized and accepted practices for welded construction, as applicable to vessels for different service and are not a means of qualifying or grading respective types or methods of welding as to their superiority one over the other. "Class 1" no more means the ultimate in the construction of welded vessels than "The First National Bank" means the largest and strongest bank in the nation.

Class 2 O. K.

It is, of course, permissible to follow the rules applying to Class 1 for vessels that are to be used under Class 2 or Class 3 service, but it is not an economically sound practice, irrespective of any theoretical argument that may be advanced on the subject, at least the A. S. M. E. Code, which is regarded as the highest piece of engineering authority published, does not concur with any such ideas of extravagance, but instead definitely sets up specifications for the construction of welded vessels to be used for definite types of service.

A large majority of vessels operating at working pressures up to as high as 400 pounds and at temperatures up to 700 degrees, when the plate thickness does not exceed $1\frac{1}{2}$ ", are to be built in accordance with the specifications known as "Class 2". Other vessels operating at pressures up to 200 pounds, when made of plates up to $\frac{5}{8}$ " in thickness are placed under "Class 3". However, vessels of the pressure generating type (steam boiler drums, etc.) and vessels for containing lethal gases, are placed under "Class 1", in which there are no limitations as to plate thickness, but thermal stress relieving and Xraying are mandatory.

In my opinion, each class as defined by the Code, is definitely within itself, there being provided a definite joint efficiency, percentage of ductility, etc. applying to each type or class.

By F. G. SHERBONDY, Vice President
The Biggs Boiler Works Company, Akron, Ohio

Member American Welding Society

Consequently, if a vessel for Class 2 service is constructed according to Class 1 specifications, a higher joint efficiency is allowed, resulting in a lighter wall thickness than would be required to meet Class 2 construction and the vessel would be operating under a higher fibre stress at a reduced factor of safety, providing the ductility and the tensile strength of the welds were equal, with whatever additional protection thermal stress relieving and Xraying would afford.

It is only natural of course, where certain manufacturers have these expensive accessories installed (large annealing furnaces and Xray equipment), that they would attempt to utilize them in the construction of all welded vessels, irrespective of service requirements and especially if the purchasing agent or his management could be sold on the idea of the superiority of such construction and subscribe to the paying of a higher price for such commodities.

Our company have enjoyed for many years the reputation of building high class equipment and have always advocated and used a high factor of safety in the construction of our various products. Naturally, I very seriously doubt the advantages to be gained in "trading" ten per cent of the joint efficiency of a vessel for Class 2 service, for the benefit derived by thermal stress relieving or the added protection of Xraying for such service requirements, especially when the other important factors such as tensile strength and ductility are the same. This is exactly what happens, however, when the average vessel for Class 2 service is specified to be built according to Class 1 specifications.

Over-Specification

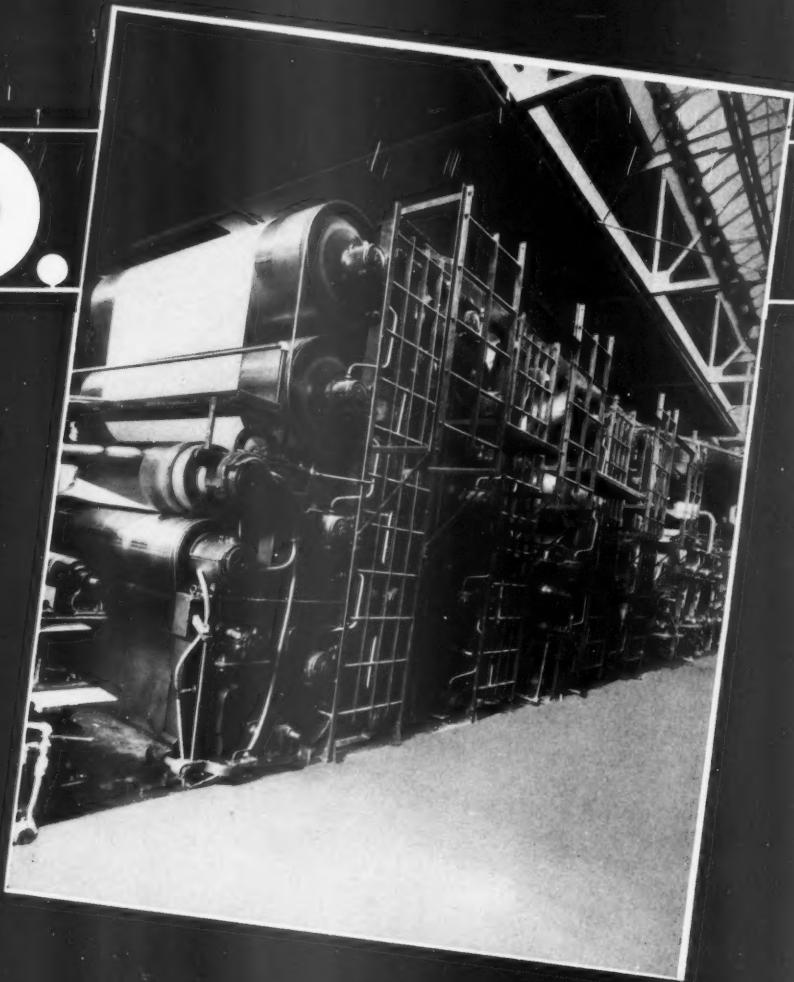
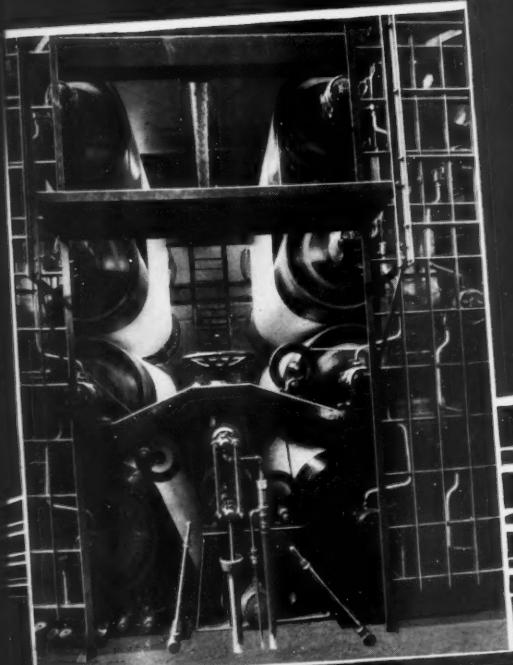
I maintain that different manufacturers have developed welding procedures that are capable of meeting the joint efficiency and ductility requirements of the Code for the construction of vessels for Class 1 service, but owing to their limited range of plate forming and assembling capacity, have not felt it advisable or a sound financial investment to go to the expense of installing large annealing ovens and Xray equipment for processing the particular range of welded vessels that come within the scope of their manufacturing capacity, and by series of tests and other demonstrations have also assured themselves that the welded products of their particular procedures are not improved by thermal stress relieving. This experience and the quality and performance of such products

Q.E.D.

"I do not think I could
recommend again
a machine that is
a vertical dryer."

A. F. Smith

In few words Frank Smith of
Borg Paper Co. sums up
on Vertical Dryers for
light weight papers.



Add Dryers without lengthening your
machines.

Dry the sheet more uniformly.
Increase the drying rate per square
foot of dryer surface.

Save 100% on your Dryer Felt.

Reduce steam pressures.

Write for the February MESSENGER
and read the complete story.

THE BLACK-CLAWSON CO.

HAMILTON, OHIO

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SHAR
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Christened The Miami Uniflow

The new Shar-Te Vat is as imposing in what it has accomplished as it is in the picture.

The center of attention all through the 1931 experimental stage and at the close of the year proclaimed a success by the mills operating them.

Generally predicted that 1932 will see many more Uniflow vats built—a still greater interest shown in Uniflow progress—a dawning of the fact that here actually is something new and of tremendous importance in vat design.

Keep posted. All the latest data upon request, much of it of a highly significant nature. Write.

SHAR-TE BROS. MACHINE COMPANY

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DIVISION OF

The Black-Clawson Company
Hamilton, Ohio

Export Office, 14 Park Row, New York, New York

service, are matters of definite record and when an engineer, thru lack of knowledge or lack of faith in the Code, demands a construction superior to Code requirements he is in my opinion, placing an unnecessary burden on his management and being unfair to his profession.

While stress relieving on vessels of relatively small diameter and extremely heavy wall thickness is possibly an essential requirement and Xraying of welds is undeniably a desirable feature in the construction of steam boiler drums or vessels of the self-generating type, these factors in themselves, do not add to the tensile strength, ductility or fusion quality of the welds and in my opinion, result in an economic waste when employed beyond the Code requirements.

The benefit derived from thermal stress relieving may, in some instances, be misunderstood. It most certainly is not intended as a "cure-all" for welding ills. In its present scope or application, it is undeniably a compromise from the original thots on the subject, probably due to the favorable service records of high pressure welded vessels (in plate thicknesses up to 1½"), which were produced under welding procedures wherein objectionable stresses were not set up and thermal stress relieving was not employed. Regardless of its function, its incorporation in the Code was necessary on account of the broad interpretation of specifications resulting from unifying the many different procedures and the fact that individual ability or procedure could not be recognized by the Code committee.

Recent Code Changes

On July 7, 1931, the A. S. M. E. Code committee, when adopting the new rules for the construction of unfired pressure vessels, placed the stamp of approval of the highest engineering authority on fusion welded construction. The developments in recent years in the art of welding and the formal adoption of this method of construction, materially affect recognized and accepted methods of long standing.

The universal approval accorded welded construction is the result of painstaking development, research and the co-operation of fabricators, leading insurance companies, engineering societies and others and the future development of the art depends largely upon the continued application of the fundamental principles of good welding, the same as in any other development of its kind.

It is, however, paramount that engineers charged with the important task of preparing specifications for welded vessels, adhere closely to these fundamentals of good welding and a thoro knowledge and application of the rules and specifications as set up in the A. S. M. E. Code, should result in specifications embracing such fundamentals without undue penalty to the fabricator or unwarranted capital investment by the purchaser.

There may be a tempting tendency for the industrial or specifying engineer to "play safe" by specifying "Class 1" construction for vessels that rightfully belong in Class 2 or Class 3 and thereafter feel relieved of any individual responsibility. When this tendency

is allowed to influence judgment to the extent of erroneous and unnecessarily extravagant specifications, the soundness of the engineering is open to serious question and the commercial benefits derived from the advancement of the art are lost. Fortunately this situation is not often encountered.

Biggs welded rotary digesters and other high pressure vessels have for several years been accepted by the leading insurance companies, various states, boards,

Good engineering presupposes a correct interpretation of established codes that have been worked out by authorities on the basis of wide experience, and specification of materials, methods and equipment which will provide the maximum in utility consistent with all factors of cost. Mr. Sherbondy's discussion on the Welding Code Classes clears up some points that, because sometimes misunderstood, are causing needless expense.

etc., and have given continuous and satisfactory service, as many testimonial letters will verify and these vessels were built under our procedure control in which objectionable stresses are not set up originally and even a higher joint efficiency was used than is now specified under Class 2 Code construction. None of these vessels has been annealed or stress relieved.

We have staked our reputation on the construction of our welded rotaries and other products and their performance has in our opinion, demonstrated the correctness of our position. This experience is all cited in the way of argument on the side that thermal stress relieving most certainly is not necessary beyond the Code requirements and when employed, that fact should not be considered as contributing in itself to a superior construction.

When pulp and paper mills purchase welded pressure vessels they should inquire into the individual ability, experience and record of performance of the pressure vessel manufacturer and be guided by the proper interpretation of Code rules.

Welded construction has definitely proven to be superior to other types of construction and altho in some instances there is a slightly lower initial cost, this is not the guidepost on which to base the purchase. The saving to be effected by decreased maintenance, general utility, prevention of loss in production owing to shut-down for repairs, certainly favor welded construction as to ultimate cost, irrespective of its initial or first cost and both the purchaser and the manufacturer should be equally interested in seeing that the fundamentals of good welding are always demanded with due recognition as to the ability of the producer.



SENSIBLE REFORESTATION

By W. C. MUMAW, Development Director
Grays Harbor Railway & Light Company

TO THE pulp company seeking a base of operations, a matter of most vital importance is that of the raw material supply. No person would be so foolish as to suppose that a pulp mill could be operated in a sandy and treeless desert. No more can one be operated in a wooded country without first taking into careful consideration the nature of, and the prospect for, continued yield from the forest upon which the mill depends.

Thus, Washington communities seeking the establishment of pulp mills in their midst are called upon, not only to declare the quantity and character of the supply of pulp timber which they have to offer today, but also to give some guarantee of sustained supply upon which pulp companies can rely in years to come. The reason for this is obvious. Pulp mill developments are costly things, not to be built today and discarded tomorrow for lack of materials with which to feed their machines. Businesses do not invest millions in an evanescent project in one community when some guarantee of permanency can be secured from a neighboring community.

A solution to the problem of perpetual supply of pulp wood for mills locating in Southwestern Washington lies in the present National forest and privately owned supply of timber at the headwaters of the streams in the Grays Harbor area and in Senate Bill No. 23 which was passed at the last legislature and which is now known as the reforestation law. But the solution requires a different application of the reforestation law than that which has prevailed to date.

Under the provisions of this law the state forestry board is authorized to set aside lands which are more valuable for reforestation than for other purposes. The valuation of this land is fixed for tax purposes at \$1.00 per acre west of the Cascades during the growing period. A further severance tax of 12½% is imposed, to be paid at the time of cutting.

Heretofore, the tracts set aside under this law have been scattered 40, 80 and 160 acre plots, none of which is large enough to allow economical protection or commercial exploitation. A much better plan is possible under the provisions of this law.

In the Grays Harbor area alone we have 600,000 acres of logged off land. Of this, only 200,000 acres are agricultural land. This agricultural land, for the most part, lies in the low bottoms close to the banks of the streams which parallel each other thru most of the district. The watersheds of these streams are practically useless for anything except forest land. An occasional small tract might be suitable for agricultural purposes, but these would not occur in sufficient frequency to make the building and maintaining of roads and schools, which are always part of the tax burden of agricultural lands, a paying proposition. By making forest reserves or rather reforestation areas of these

watersheds, we eliminate the necessity of building roads and schools in them. This is an important phase from the standpoint of county finances.

Taking the watersheds straight thru from the Chehalis River northward to the borders of the Olympic National Forest and from the Pacific Ocean eastward to the same point, there exist at least twelve areas containing from 20,000 to 50,000 acres each of land fit only for reforestation purposes. These tracts lie in long, narrow strips along the watersheds, ranging in width from three to twelve miles.

In practically all these areas are abandoned logging road grades which could be maintained for future logging operations or for fire lanes for the protection of these areas. In most of them, 50% of the area is well started in reforesting, some of the growth ranging from 15" to 18" in diameter. At the headwaters of these streams lie both private and National Forest timber which would furnish a supply for the next 15 to 25 years, or until the present reforested area came into production.

And the present reforested area would come into production in plenty of time to take care of the demands of a pulp wood operation. On a basis of the sawmill utilization of one billion feet a year for the Grays Harbor area, sufficient timber exists at the headwaters of the streams on which the various operations are going on to keep the sawmills going for the next 40 to 50 years. For sawmill utilization, sustained yield is computed upon a rotation of eighty years. At this rate sawmills would be forced to curtail almost 50% in their cut to maintain a sustained yield from the present forested areas.

But sawmills are wasters of wood. The economical utilization is cellulose, and for this method of utilization a merchantable crop can be harvested in around 35 years. By careful selection and thinning, two cellulose crops can be taken from the reforested area while a commercial sawmill growth is being raised. Thus both pulp wood and sawmill timber can be secured on the same tract, if desirable, or two full crops for cellulose use in the same time it would take to grow one crop for sawmill timber.

And so, to augment the present perpetual yield rate of one-half billion feet a year, the practical plan is to consolidate the areas along the watersheds which have been logged off, classifying them as reforestation lands under the reforestation law and making it possible for the private enterprise to entertain a real reforestation program.

One such watershed as has been described above will supply a pulp mill of 150 tons capacity in perpetuity. The increase in rate of growth in the Olympic Peninsula area varies from one cord per acre-year around Olympia to two cords per acre-year around Hump-tulips. At an average rate of increase of 1½ cords per acre-year, a sustained yield adequate to supply 1,500

tons of pulp daily in perpetuity is indicated in the Grays Harbor district.

What is true of the Grays Harbor district is also true of other parts of the state, particularly the area south of the Chehalis River and west of the Cascades. The only difference in this area is that no National forest reserve backs it as a source of reserve supply as is the case with the north Grays Harbor area. However, there are large blocks of standing timber which can be combined with the cut-over lands of the district to make up blocks similar to those mentioned. Here, too, the cut-over lands are at least partially reforested already, in some instances usable pulp stands being available at this time.

This consolidation of large blocks of logged off lands would make possible the commercial practicability of reforestation. The operating owners eliminate the possibility of the growing enterprise being eaten up by taxes. To all practical intents and purposes the land set aside under the reforestation law is tax free for all time except for the severance tax of $12\frac{1}{2}\%$.

So the growing of its own pulp wood for future use becomes a project not beyond the realm of possibility for the pulp mill locating in the state of Washington. The fact that areas large enough to grow a sustained yield sufficient to meet the capacity requirements of a large plant can be secured and operated as economically as anywhere in the country puts a complexion on the pulp situation different from anything that has as yet been in evidence.

The dabblings with the reforestation law which had to do with small, isolated tracts are futile and impractical. No concern, either pulp mill or logging operation, can be interested in the reforestation of an area

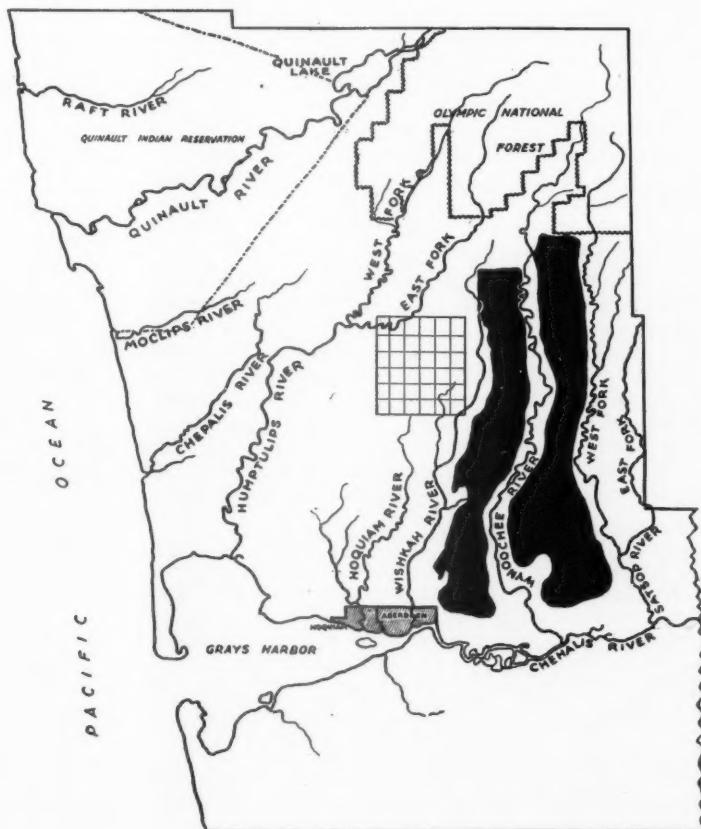
that is suitable for little more than a child's playground. But a sane consolidation of these large watersheds which are obviously unsuited for anything but forest lands, means a new era in wood utilization—the cellulose era.

The general tendency today is to use all marginal agricultural lands for purposes other than that of farming. Certainly these watersheds can be considered agricultural lands only by a long stretch of imagination. Western Washington grows timber faster and better than any other portion of the country. Then is it no reasonable to suppose that its uplands which are of questionable agricultural value should be put to the crop purpose to which the surrounding country is best suited?

It is sometimes argued that wood utilization is falling off and that, for this reason, other use should be made of possible forest lands. Such is not the case. Studying the statistics of the period from 1899 to date an increase in wood utilization of 400 million board feet per year is indicated. Lumber utilization—the product of sawmills—has remained at about the same figure during that time. The increase has been in the use of veneers and pulp products.

Just how far into the future this increased utilization will project itself is hard to say. If we could see clearly the conditions that will exist fifty years hence, we would know exactly what to do. Under the circumstances, however, it seems advisable to prepare for tomorrow's wood demands by a practical reforestation program which primarily will provide for the requirements of pulp and paper plants in perpetuity. The consolidation of large tracts under Senate Bill No. 23—the reforestation law—is the way to make that preparation.

This map, which shows the major portion of Grays Harbor county in Southwestern Washington helps to understand the idea of bloc reforestation explained by Mr. Mumaw in the accompanying article. The fundamental idea is to reserve exclusively for forest use the non-agricultural lands situated in the major watersheds. The two black shaded areas are shown as unit examples. Other areas would be located in a similarly concise fashion in other watersheds. The small squared area in the center of the illustration is a township, thirty-six square miles, shown for convenient comparison of area.



PACIFIC PULP & PAPER INDUSTRY

Superintendents Gather at Buffalo in June

Under the leadership of Past President Fred J. Rooney, plans are rapidly taking form for the thirteenth annual convention of the American Pulp and Paper Mill Superintendents Association which will be held June 2, 3 and 4 at the Hotel Statler, Buffalo, N. Y.



BEN LARRABEE

Named on TAPPI National Executive Committee

Attendance at the convention by all members of the American Pulp and Paper Mill Superintendents Association is more necessary and important than ever before, Past President Rooney asserts. "The absolute necessity for superintendents of all pulp and paper mills to operate their plants at the highest degree of efficiency under existing conditions is vital. The program for the convention is being arranged with the sole thought of providing information that will assist the superintendents in attaining this objective.

"This convention is going to provide the sort of concrete information of which every superintendent and every other pulp and paper mill executive is in actual need."

Brazeau Revisits Longview Bill

G. S. Brazeau, in charge of the Chicago office of the Pulp Division of the Weyerhaeuser Timber Company, Longview, spent a few days at the plant in late February. Mr. Brazeau went East just after the opening of the mill and reports that since the pulp has reached the trade it has been enthusiastically received, not only because of its quality, but also because it is a product of west coast hemlock. He was accompanied by Herbert D. Randall, vice-president and mill manager of the Champion Coated Paper Company of Hamilton, Ohio.

Port Townsend Production Slower

Number one machine at the Port Townsend, Washington, kraft mill of the National Paper Products Company, was shut down for a period in February. Commenting on the closing down of this big unit, Assistant Resident Manager E. W. Erickson stated that the operation of the machine for the future is indefinite and will depend to a large extent on orders received for the products of the machine. The mill has a daily capacity of 250 tons of finished paper and board.

This follows announcement of the company several months ago that shortage of orders was apt to result in curtailed production.

Pulp Market Outlook Not Encouraging

In the pulp field interest centers for the time upon labor difficulties in Sweden. The long-brewing strike (or lockout, depending on viewpoint) has materialized. Contrary to accepted laws of economics that depreciation of a nation's exchange tends to inflate internally and raise living costs, Sweden presents the paradox of badly depreciated exchange and lowered wages, a situation more or less equivalent to a double reduction of pay.

Swedish labor has long threatened to resist any wage declines and consequently was not in a mood to accept without a struggle the notice served by the employers that existing wage agreements would end, to be supplanted by lower scales. At the same time the employers, facing an oversupplied market, were in a strategical position to withdraw their tonnage from production for a considerable period, during which time the desired number of hitches could be taken up in the belt of the workman.

At the present writing a large number of Swedish pulp mills are idle. The Swedish paper industry has been similarly shot thru with labor troubles. The duration of the lockout in the Swedish industry is difficult to forecast. In previous years the trouble has sometimes resulted in closing the mills for many months.

Withdrawal of a large portion of Swedish pulp tonnage may have some favorable price stimulation, but so far this is not noticeable. Large stocks of Swedish pulp are said to be in storage in Atlantic ports, sufficient to provide a balance wheel in price fluctuations until open water permits resumption of shipping from Northern Europe. In the meantime it is possible that the labor trouble will be settled and the mills will again be in production.

Pulp prices changed comparatively little during the month. A bottom seems to have been reached. Whether it is a true bottom or not remains to be seen. Bleached sulphite continued downward to \$40 a ton, and even lower. Unbleached went to \$30 and under and then was "stabilized" at \$32, a price far below domestic pulp mill costs. Kraft continued uneventful at \$30.

Meanwhile the continuing pressure of a pulp market below domestic production costs has worked hardship upon the domestic manufacturers, forcing more closures on either a partial or total basis.

The pressure on the pulp mills has been reflected to the communities in general by forcing pulpwood costs down to levels where the supply disappears. Wood costs in Eastern states are reported at lower levels than they have been for years.

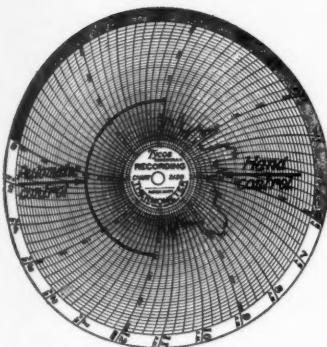
St. Helens Re-Elects All Officers

At the annual stockholders' meeting of the St. Helens Pulp & Paper Company, held in February, all officers were re-elected.

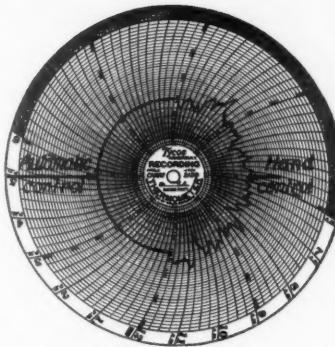
Max Oberdorfer is president and general manager; Dr. Robert Ellis of Portland is vice-president; Irving T. Rau is secretary, and H. F. McCormick is chairman of the board of directors.

Western Paper Converting Elects Officers

William S. Walton was re-elected president of the Western Paper Converting Company, Salem, Oregon, in February. Harold B. Tronson was re-elected secretary-treasurer; A. B. Galloway, vice-president and manager. The following directors were re-elected: A. B. Galloway, H. B. Tronson, Homer H. Smith, D. B. Jarman, Charles E. Wagner, Lloyd Riches, Walter E. Keyes and William S. Walton. Lee Galloway is local manager.



These two control charts show the evening effect of the Tycos system for automatic temperature control of wood pulp grinders. At the left is a comparison of hand and automatic control on a pocket type grinder. At the right, a similar comparison on a magazine type grinder.



TEMPERATURE CONTROL IN GROUNDWOOD PRODUCTION

By C. D. DeMERS
Taylor Instrument Companies

Development of the ground wood process along modern lines of maximum efficiency and production has not kept pace with the development of both equipment and technique followed and used in many of our leading industries.

The principle of the wood pulp grinder has not changed during the 90 years that have passed since the first unit was developed. Grinder design, driving methods, stones, pressure control and other mechanical details have been greatly improved during the past 25 years.

These improvements, while tending to increase productive capacity and efficiency as measured in terms of a more uniform stock, have done little to improve the control of these units to a point where stock of uniform quality for a definite product can be produced. Consequently, the same methods of stock control are used that were being used 25 years ago.

This method of control, dependent largely on the grinderman's skill, has developed a craftsmanship which produces fine stock with a fair uniformity, but like all operations dependent on the human element, is subject to the difference in the degree of skill and many personal opinions.

A few mills have installed recording thermometers with bulbs located at various points in the stone pit, with the aid of which the grinderman can govern grinding temperature more closely. The instrument also provides the superintendent with a chart record.

Location of the bulb has been found to greatly affect the value of the chart record and accuracy of control.

Efforts of pulp mill operators to control stock temperature by intermittent readings with an indicating thermometer and later with continuous records from a recording thermometer, indicated that uniform temperature in grinding process was desired. This lead the Taylor Instrument Companies' engineers to develop the first successful application of automatic grinder temperature control.

Uniformity in grinding temperature is not a new subject. After considerable research work covering primarily the proper bulb design and bulb location suitable to various type grinders, and some changes in a standard Tycos Temperature Recording Regulator, Taylor developed a successful application several years ago.

This original instrument has been in successful operation ever since the day it was originally installed.

Studies of grinding temperature control reveal that variations in grinding temperature materially affects the freeness, color, and tensile strength of ground wood fiber. Further, changes in freeness of the stock due to variations in grinding temperature affects the results obtained in processing the stock in the jordans, beaters and screens; affects the character of its flow under the slice and the action of the suction boxes, suction rolls and presses in their contact with the sheet.

Stock produced on grinders controlled with the Tycos Pulp Grinder Temperature Regulator is noticeably free of coarse or bundled fibers caused by grinding at low temperatures, and objectionable flour or fine pulp produced when grinding at extremely high temperatures. Material increases in production have also been noted.

In producing ground wood pulp normal damage to stones caused by rapid expansion and contraction is largely eliminated. The number of burring operations is reduced.

The Taylor Instrument Companies' instruments and application method for controlling wood pulp grinding temperature, embody an instrument of great sensitivity and a regulator bulb location that hampers in no way the usual operating activities of the worker. The nature of the control is constant and within the limits of 1° F. + or - variation of any predetermined temperature. The control point can be changed at will by the operator and in starting up after a shut down the temperature can be brought up gradually to the operating point. This eliminates the damage due to a rapid increase of stone temperature.

The entire system is simple, practical and reliable and is of too great importance to escape the attention of any mill operator who realizes the value of temperature control in this most important process.

It enables the operator to grind the stock at a temperature best suited for a particular purpose.

The Tycos system of automatic temperature control for wood pulp grinders places the regulator bulb or thermal sensitive element where it is adjusted as the stone wears smaller in diameter, where it records and controls accurately and continuously yet is protected from damage, without interfering in any way with the operation of the grinder. The installation is fully covered by U. S. Patent No. 1806238 and Canadian Patents Nos. 254887 and 331574.

The Taylor Instrument Companies feel that the development of this application is a worth while contribution to the art of paper making. Installations are now being made on grinders of various sizes and types.

New Types
New Models
New Machines

EQUIPMENT

Manufacturers of, and dealers in, equipment used by pulp and paper mills, board manufacturers, converting plants, paper merchants, or any other branch of the industry may make their announcements in this department.

New Dealers
New Branches
Appointments

Shartle Centrifugal Extractor

Centrifugal extractors have been used in other industries such as chemical, textile, rayon, sugar, oil, and steel for many years. Their application to the paper industry is comparatively recent. The Shartle Bros. Machine Company has brought out an improved machine of this type.

After developing the first American machine for handling paper stock Mr. T. A. Bryson, of the Shartle company found that to produce greater capacity and more efficient cleaning for the paper industry would involve radical changes, which he has incorporated in the Miami Centrap. These radical changes involve the use of three nested baskets, which greatly increase the capacity, and an entirely new arrangement for separating the dirt particles in a much more efficient manner.

The adoption of rigid type of bearings, the use of V-belts for driving and the elimination of clutch have not only stepped up the safety factor but also made the machine much more efficient from a mechanical and dirt extracting standpoint.

The automatic oiling system with which the Centrap is equipped is of great value by reason of the fact that the machine cannot be placed in operation without the oil pump first being started. Next, should anything happen to the oil pump, the machine immediately shuts down.

It is claimed that the Shartle Centrap is devoid of vibration, all moving parts being accurately balanced dynamically on the Lawaczeck-Heymann balancing machine in the shops of The Black-Clawson Company.

A material saving in power is realized. Figuring on handling a total production of 1500 A. D. pounds per hour of paper on a machine, the Centrap will handle 700 gallons per H. P. per hour of this furnish, or approximately 50 A. D. pounds per H. P. per hour.

Interesting Rubber Roll Application

Nearly a ton of soft rubber has just been applied to each of two of the largest rolls used in the United States paper industry by the B. F. Goodrich Company at its plant in Akron, Ohio, using the exclusive patented vulcalock method of attaching soft rubber directly to metal.

These two smoothing press rolls for the Champion Fiber Company plants at Canton, N. C., are each 241 inches long and 32 inches in diameter. Each weighed approximately 11 tons before the soft rubber surface was applied. There were 1986 pounds of soft rubber put on each of the rolls made of cast iron. The rubber was vulcanized on each roll in a single operation.

One of the most interesting of the technical operations in the application of the soft rubber roll was the grinding of crowns on each. The crown on one is 110 thousands of an inch and on the other 130 thousands of an inch, tapering gradually from the center to the outer edge of the roll.

Before putting the vulcalock process into operation, the surface of the metal core had to be thoroly cleaned. The vulcalock process was patented November 2,

1926, after months of research in the Goodrich laboratories. Besides its application on rolls used in paper industry operations, other successful uses of the vulcalock process have been in lining tanks used in the chemical industry, linings for ball mills for the ceramic and chemical industries, gravel chutes, launder chutes, dredge pump linings, exhaust fan linings, and covering metal for resistance against gases.

New Heavy-Duty Vibrating Screens by Link-Belt

Two new types of vibrating screens have just been announced by Link-Belt Company, Philadelphia, Pennsylvania. These screens are known as:

- (1) Link-Belt Positive-Drive-Type, Heavy Duty Vibrating Screen, which is made with both single and multiple decks.
- (2) Link-Belt Unbalanced-Pulley-Type, Heavy-Duty Vibrating Screen, made with single and multiple decks.

These two screens are used where large screen openings are required and heavy capacities must be handled.

The Positive-Drive-Type in the single-deck screen can be furnished to provide any given fixed amplitude, with shaft speeds to suit. The amplitude of vibration is fixed at the factory, before shipment, to suit the work the screen is to do. Any given amplitude will cover a wide range of screening surface openings. The angle of the screen inclination, the speed of operation and the direction of the rotation, all are readily changed at any time to suit the kind, size and condition of material to be screened. The rotation determines whether the vibrations are with or against the flow of the material.

The Unbalanced-Pulley-Type, Heavy-Duty Screen is available with single or multiple decks, for high speed work where the material is of a stick nature, and on close-sizing problems where the screen openings are not large.

The total movement, or amplitude, of the screen can be varied by the user, from zero to about $\frac{1}{4}$ ", by simply changing the counterweights in the weight containers—a valuable feature where screen cloth openings must be changed frequently, and when the condition of the material handled is likely to vary as to moisture content, etc. The angle of the screen and the speed and direction of operation can also be changed readily by the user, to suit operating conditions.

A new pulper designed to solve the problem of successfully handling rejections and waste which accumulate in manufacturing processes has been put on the market by the E. D. Jones & Sons Company of Pittsfield, Mass.

The machine is so designed as to preserve fibre characteristics. Stock consistency can be regulated quite accurately and the repulped stock can be furnished directly to the beaters at any desired time in the beating cycle.

The pulper is accessible. The entire machine can be opened and washed completely in five or six minutes. The disintegrating chamber is conical in shape, made of cast iron, and divided horizontally from end to end.

Open-End Rod Mills Winning Favor in Paper Industry

"Experience during the past year has demonstrated to pulp and paper manufacturers that a considerable portion of the beating and pulping operations can be accomplished with best results by using rod mills of the open-end type," says Wilbur L. Campbell, Paper Mill Research Engineer of The Mine & Smelter Supply Company of Denver. "Numerous plants using equipment of this type in the Great Lakes region, Middle West and in the Pacific Northwest have proved forcefully that notable economies may be effected and stronger, more uniform product may be obtained by the use of open-end rod mills.

"The advantages of beating paper pulp with the Marcy open-end rod mill were shown for the first time in January, 1924, when a batch of half-digested wood chips was submitted to the Marcy Mill Division of the Mine & Smelter Supply Company by the Forest Products Laboratory of Madison, Wisconsin. Prior to that time, the Marcy rod mill had been in use in different parts of the world for ore milling and other types of grinding and crushing. Since 1924 rapid progress has been made in adapting the Marcy to meet widely divergent needs in the paper industry."

Research activities in this field have been centered by the Paper Mill Division of the Mine & Smelter Supply Company in the well-equipped experimental laboratory at Denver. All research and development in this field now is under the supervision of Mr. Campbell, who is well known throughout the industry for his management and special research at a number of paper mills in New England and the Great Lakes region.

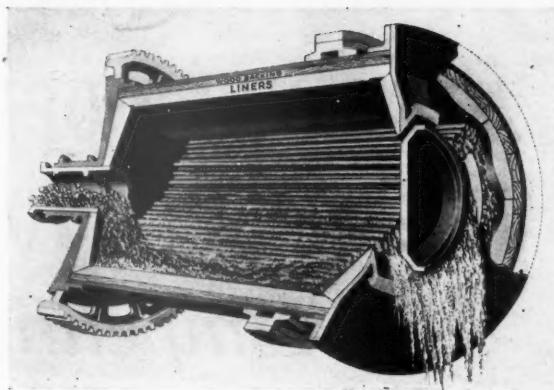
This laboratory is equipped to process samples of raw material and return the beaten stock with finished sheets, accompanied by specific recommendations, operating data, costs and other information. This service is rendered without obligation to all paper manufacturers who are interested in adapting Marcy open-end rod mills to their beating problems.

"An outstanding feature of this equipment," Mr. Campbell explains, "is its open-end construction which provides for continuous operation rather than batch operation. The Marcy automatically maintains a low pulp level. All by-passing of stock is eliminated, producing a uniform product entirely free of unbeaten fibres.

"The cascading rods knead, draw out, and roll the fibres in the machine direction, or lengthwise, insuring individual treatment of each fibre and long slow fibres with maximum strength in the finished product. The great flexibility of control in the Marcy makes it particularly advantageous in this day of constantly changing specifications. In the reduction of chemical pulps, the Marcy permits a much shorter cook. It separates fibrally and hydrates harder stock than possible in Hollander Type beaters. Straw, groundwood screenings and chestnut chips are refined in such a manner as to eliminate shives and shiners, resulting in very high recovery."

The Marcy is characterized by two-tire mounting for the revolving mill barrel, a single helical gear mounted on the true center of the mill for driving, feed head situated higher than the point of discharge, an annular space between the discharge plug and the discharge head allowing the material to discharge directly out of the mill from the end of the rods, and patented conical ends of the mill barrel which keep the rolling and cascading rods in perfect alignment.

A major advantage is the elimination of the human element, which is a prominent feature with beaters of



An open section view of the Marcy Rod Mill

the Hollander type, and inevitably impairs uniformity of product as well as increasing operating costs and time lost for shutdowns.

In every installation of the Marcy open-end rod mill, it is claimed, the power consumption has been cut from 40% to 60%, usually averaging about 60%. One Marcy mill capable of turning out 50 to 60 tons of stock, finished for the jordan, takes a space ordinarily required for a one-ton beater of the old type.

Mr. Campbell points out that it is particularly efficient in operating on kraft, bag, and wrapping; requires only 160 h.p. to operate under all conditions, and insures a high resistance to tear, high tensile and Mullen. In the manufacture of strawboard, rag papers, etc., it will produce 50 to 60 tons of stock finished for the jordan, consuming only 60 h.p.

The makers of the Marcy now build their mills sufficiently heavy for this service with resulting freedom from interruptions and low cost for upkeep, overcoming the difficulties resulting from the lightly constructed early models. All their mills during the past four years have required negligible upkeep, they report.

The makers of the Marcy always recommend the installation of one jordan with each rod mill, the former to act as a brusher. The jordan should be fed by gravity with the plug lightly set or pulled back entirely, and discharging against as high a head as possible. In no instance, however, is the old type of Hollander beater needed where a Marcy open-end rod mill is installed.

"The use of a reagent feeder provides for the addition of size, alum and color to the rodded stock in solution," says Mr. Campbell. "A stock washer on the pneumatic principle also can be supplied, the last word in efficiency where a thoroughly washed stock is required."

The Mine and Smelter Supply Company, Paper Mill Division, invites inquiries. Manufacturers and sales in Canada are handled by Wm. Hamilton, Ltd., Canadian Cement Building, Montreal.

Paul Morse, purchasing agent for the Leadbetter mills, has been transferred to Vancouver, Washington, in connection with lumber sales. His duties as purchasing agent have been assumed by Theodore Osmund, who has added the work to his other tasks.

Evan Hall, formerly boss finisher at the Camas mill of Crown Willamette Paper Company, has joined the staff of the Oregon Pulp & Paper Company.

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Today this mill is operating at the same capacity but with a saving equal to the cost of a thousand or more pounds of steam on every ton of paper produced—a saving secured by utilization of heat units that were previously wasted.

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Washington's Reforestation Plans Progressing

Washington's reforestation program under the state forest yield tax act, was given a promising start in late February. State Forester George C. Joy announced the state forest board approved 184,765 acres of cut-over lands for classification. The state tax commission was expected to approve the action which automatically will subject the area to a 25-cent per acre tax.

"The act aims to encourage reforestation of privately owned lands and the practice of private forestry on a sustained yield basis," Forester Joy said. "It aims to consolidate state and privately owned lands into economic units for protection and administration purposes and to keep land on the tax rolls."

"In this last respect, there already is tangible evidence that the law will bear fruit. Many thousands of acres of logged-off land, on which taxes are delinquent for from one to four years, have been listed by owners for classification."

The board unofficially determined that 60-year timber was an age limit for classification. At this point in growth, such timber usually becomes merchantable either as railroad ties or piling, he pointed out.

Under the new law, owners are taxed 25 cents per acre until timber on their lands become merchantable. At the time the timber is sold, a yield tax is paid to the state to compensate for the previous low year tax.

Total acreage recommended for classification was: Clallam county, 14,355; Cowlitz, 21,723; Grays Harbor, 38,142; Jefferson, 200; King, 269; Klickitat, 13,166; Lewis, 28,518; Pacific, 2,290; Pierce, 32,235; Skagit, 480; Snohomish, 1,852; Thurston, 31,535.

The Japanese Paper Industry

Production and Sales—January, 1932

	Production (lbs.)	Sales (lbs.)
Printing Paper — (Superior Quality)	11,148,591	13,899,336
Printing Paper — (Ordinary Quality)	9,067,016	9,789,538
Drawing Paper	2,615,508	3,672,098
Simili Paper	7,584,141	10,673,254
Art Paper	849,567	844,200
News Printing Paper	41,219,206	41,659,577
Sulphite Paper	4,143,065	4,386,610
Colored Paper	1,782,607	1,962,068
Wrapping Paper	12,891,412	15,334,047
Chinese Paper	1,577,200	3,081,966
Board Paper	6,753,915	6,345,534
Sundries	4,745,553	4,430,553
Total	104,377,781	116,078,781

POSTAL TELEGRAPH

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Eases Scandinavian Newsprint Pressure on U. S.

Decision of the British government to retain newsprint on the free list is good news to pulp and paper producers of the Pacific Northwest who would have felt, indirectly at least, the adverse effect of increased Scandinavian competition had the United Kingdom decided to establish a tariff on that commodity.

Newsprint executives in British Columbia regarded the agitation for taking newsprint off the British free list as a move on the part of the Rothermere-Beaverbrook interests to enlarge their control over the English newspaper situation. In substantiating this statement, it was pointed out that at present England receives its newsprint supply from three sources—the domestic manufacturer, the Scandinavian, and Finnish mills.

"Scandinavian competition has been one of the most serious threats to market stability in the newsprint business we have encountered in many years," said an executive of one Pacific Coast newsprint mill. "To shut Scandinavian mills out of the British markets would have been to demoralize still further the situation on this continent."

British Paper Production

The 1930 census of production for the United Kingdom gives production of packing and wrapping papers (exclusive of tissue papers) during that year as totaling 202,000 long tons as against 159,200 long tons in 1924, an increase of 27 per cent. Production of newsprint paper during the same period increased from 499,700 tons to 650,700 tons, other printing papers from 313,600 tons to 351,000 tons, boards from 105,900 tons to 172,900 tons, while production of writing papers in large sheets decreased from 115,300 tons to 110,300 tons.

Ossian Anderson on Forest Research Council

Four new appointments have been made by Secretary of Agriculture Hyde to the Forest Research Council of the Pacific Northwest, which held its annual meeting in Portland March 9.

The new appointees are Ossian Anderson of the Puget Sound Pulp and Timber Company, Everett; N. C. Jamison of the Sauk River Lumber Company, Everett; J. B. Woods of the Long-Bell Lumber Company, Longview, and Paul Neils of the J. Neils Lumber Company, Portland.

New Crown Zellerbach Subsidiary

The Comfort Paper Company, San Francisco, has been organized as a subsidiary of the Crown Zellerbach Corporation to act as sales distributor for Zee and Zalo toilet papers. R. A. McDonald of the Crown Willamette Paper Company is president of the Comfort company, J. L. Adler is vice-president and general manager and S. E. Plumb is sales manager. Mr. Adler formerly was business manager of the San Francisco Call and Mr. Plumb left the General Foods Corporation about a year ago to join the Crown Zellerbach forces. Offices are in the Crown Zellerbach building at 343 Sansome St.

Japan's Pulp Imports—December, 1931

Japan imported chemical pulp as follows in December, 1931 (amounts stated in lbs.): Sweden, 2,832,133; Norway, 1,326,800; Germany, 11,867; British, 40,267; U. S. A., 3,460,400; Canada, 7,376,533; Europe, 560,667; total 15,608,667.

T-R-A-D-E - T-A-L-K

Devoted to the Paper Trade of the Western States

Ed Doran Answers Last Call

Edward A. Doran, vice-president of the Coast-wide paper jobbing organization of Blake, Moffitt & Towne, died in San Francisco on March 2. Death came a few hours after an attack at his desk. Mr. Doran was one of the best known paper merchants on the Coast and an active worker in association affairs.

News Rules for Credit in Seattle and Tacoma

The "Paper Merchants' Credit Association" of Seattle and Tacoma has issued a formal statement to the trade in "a sincere effort to simplify and stabilize credit conditions in the paper industry."

The association has been organized for the purpose of maintaining sound trade practices and principles, has established definite credit terms as the initial step in a progressive policy, the observance of which it holds must prove mutually beneficial to buyers and sellers of printing papers.

Effective April 1st all sales—except for net cash—will be subject to the regular cash discount if paid by the 15th of the next succeeding month following date of purchase. Unpaid accounts will be refused further credit after the 25th of the second month following date of billing.

The system is similar to credit plans previously inaugurated in other market centers of the Coast.

Membership is composed of the following firms: Blake, Moffitt & Towne; Carter, Rice & Company, Corporation; Seattle Paper Company; Standard Paper Company; Tacoma Paper & Stationery Company; West Coast Paper Company, and the Zellerbach Paper Company.

Phrank Philbrook in Phine Phorm

The paper trade was well represented at the annual golf tournament held at Brawley, California, in February by the lettuce and melon shippers of that region. N. L. Brinker, Frank R. Philbrook, Fred Shaw, Frank Fernandez, Mr. Smith of Paterson Parchment and numerous others were on hand for the festivities.

Frank Philbrook, who maintains he plays an exceptionally poor game, won the fifth flight and was presented with a \$60 golf bag. His only problem now is to get some clubs as fancy as the bag. Incidentally, he also won another game recently when—believe it or not—he won an argument with a traffic cop. Mr. Philbrook might furnish further details on request.

Opens San Diego Jobbing Branch

The United States Paper Company of Los Angeles has opened a San Diego branch house to handle the sales in that territory, according to Sam Abrams, president. The same personnel will cover the section, operating from San Diego instead of the main office in Los Angeles. The establishment of branches in San Francisco and Oakland is also being considered by Mr. Abrams.

The firm has operated in Los Angeles for nine years, dealing in wrapping paper, bags, twine, cups, towels and allied lines.

New Products to Fight Depression

F. C. Stettler Manufacturing Company is fighting the alleged depression with three new specialty products, the latest of which is the Wyrtop fruit basket. The basket, as its name implies, has a wire stiffener around the outside edge near the top and is manufactured from white wood pulp board. Great strength and rigidity is claimed and with the wire on the outside, no metal touches the fruit. The baskets are packed 100 to a shipping case, nested in two tiers of 50 baskets each. They are manufactured in 3-pound, 4-pound and 5-pound sizes.

The Gomo air-pad egg box, which takes its name from its inventors, C. H. Goodyear, package engineer, and C. A. Morgan, manager of the folding box department, is the result of five years' experimenting, and has been improved somewhat this year. It is made from different grades of stock to suit the buyer's purse.

The third product is the Nu-Pac standard square berry box made from waxed paper board. This was first manufactured in June, 1931, and was tested out by many berry growers during the 1931 season. It is made without metal stitch or staple. The shipping weight of a corrugated case of 1,000 boxes is only 60 pounds.

Good Advertising Demands Good Paper

Advertisers should be consistent, Walter D. McWatters, manager of the Zellerbach Paper Company at Portland, told the Portland Advertising Club in the course of a talk on "Paper in Its Relation to Advertising." When they advertise a quality product they should do it on a quality paper. If the article has real merit good paper should be used for the advertising, not "bootleg paper".

Paper makers, he said, were manufacturing nationally from Northwest stock beautiful coated book paper with wonderful folding qualities. He cited as examples of Northwest quality production the pulp manufactured by Olympic Forest Products Company, Port Angeles, for S. D. Warren Company; Management bond and Sulphite Bond produced from Grays Harbor Pulp & Paper Company stock and distributed nationally by Hammermill, and the pulp for cellophane made at Rainier Pulp & Paper Company, Shelton, Washington.

R. F. Attridge, sales manager of Johnson, Carvell & Murphy, Los Angeles paper wholesalers, came down to the office one morning not long ago to find it considerably damaged by fire. Presumably started by defective wiring, the conflagration burned off part of the roof and damaged the whole office with smoke.

Business went on as usual, however, but the force worked in the acrid fumes of burned wood and plaster for nearly a month before repairs were finally completed.

J. G. Abrahams of the coarse grade mill order department of Blake, Moffitt & Towne, Los Angeles, died in late February. Mr. Abrahams was with the firm for many years. Previously he was with the Graham Paper Company.

L. A. Paper Trade Sluggish

Paper trade in the Los Angeles territory remains in the doldrums, according to Joe Coffman, secretary of the Los Angeles Paper Jobbers Association. Demand in all lines is desultory, and sales averages for the first two months of the year have been below the marks for 1931.

The shrinkage in volume is attributed to the general economic conditions. Decreased circulation of some magazines and their smaller size has resulted in lowered demand for book paper. Wrapping paper, which quickly reflects changes in the retail trade, has declined since Christmas.

Few price changes of importance have taken place. Kraft recently advanced slightly, and prices on kraft stock from eastern and southern mills is more nearly in accord with those of western producers than in recent months. The hoped for advance in grocery bags has not yet materialized, but glassine bags were raised in price 15% by all mills on March 1.

There is a move on the part of Los Angeles county officials to bring about a five-day week in the paper trade, in line with what is being done in other industries to aid employment. A meeting between county representatives and executives of the paper trade was scheduled for early in March to discuss the matter further.

It is understood that a number of members of the Los Angeles Paper Jobbers Association are planning to attend the annual meeting at Del Monte, and that southern California will be well represented.

Buckley Joins Sierra Paper

Emmett W. Buckley, formerly of Buckley-Lynch, wholesale paper house in Los Angeles which recently discontinued business, has joined the Sierra Paper Company as sales promotional manager.

He will direct this work not only in the Los Angeles branch but also in San Francisco for the Pacific Coast Paper Company. Both houses are branches of the Butler Paper Company. Alternate weeks will be spent in the two cities.

T. A. O'Keefe, who is now manager of both houses since Mr. Tompkins went to the St. Louis division last Fall, is following this plan in dividing his time between northern and southern California.

Wilson D. Rogers Joins Oxford

Wilson D. Rogers, who until recently was with the S. D. Warren Company, has become associated with the Oxford Paper Company and Oxford-Miami Paper Company with headquarters in Chicago and Cleveland. His early experience included 14 years with the Forbes Lithograph Manufacturing Company of Boston. From Forbes, Mr. Rogers went to the S. D. Warren Company with whom he was associated for 13 years in the development and work of their merchant sales. A great portion of his time during the first few years was spent in close relationship with the manufacturing side of Warren Papers.

Charles L. Monson, veteran country salesman for Zellerbach Paper Company, Portland, was at St. Vincent's hospital early in March to undergo a major surgical operation. Mr. Monson has been approximately 30 years with the Zellerbach company.

Crown Willamette Paper Company have started up woods operations at the Youngs River Camp, No. 5, and at Camps 1 and 2 at Cathlamet. They expect soon to have them in production at full blast.

Mountain States Jobbers Get Together

Representatives of paper firms in Denver, Pueblo and Colorado Springs gathered at the Broadmoor Hotel, near the latter city on February 27 for a social get-together and a swapping of ideas. Denver men attending were Jos. Bamber, Jr., and E. K. Erskine of the Butler Paper Company, P. H. Knowlton, T. A. Diekman and W. J. Brady of the Carter, Rice and Carpenter Paper Company, L. T. Johnston and "Nick" La Guardia, Graham Paper Company, H. C. Spicer, Dixon Paper Company, George H. Post and Charles Bigby, H. H. Post Paper Company, Joe Plotkin and I. Plotkin, of Plotkin Brothers.

A three-day school was held for salesmen of Congoleum-Nairn products at the offices of the Carter, Rice and Carpenter Paper Company in Denver on February 22, 23 and 24. The company is exclusive distributor for Congoleum-Nairn products in the Rocky Mountain territory. The school was in charge of Gus Kolsensky of the New York office.

The extensive line of books, flats and writing of the Consolidated Water Power and Paper Company of Wisconsin Rapids, Wisconsin, has been taken over in the Rocky Mountain territory by the Carter, Rice and Carpenter Paper Company of Denver, recently appointed exclusive distributors.

Arthur Peck of the Lawrence Paper Company spent a few days late in February with the Dixon Paper Company in Denver, distributors for the Lawrence Company products.

Denver paper firms see a bright ray of hope in advances from mills that the latter are three weeks behind on orders and requesting a speeding up in advance orders to allow that additional time for filling them. The firms report a lessening of the long existing apprehensive feeling on the part of buyers and a "better tone" prevailing.

European Mills Get Uncle Sam's Business

Here is a practical example of the raids foreign manufacturers are able to make upon American markets with the help of depreciated currency. A substantial order for paper for use in an island possession was placed by the United States government. The business went to a European paper mill. The price was below the barest cost of the American producers.

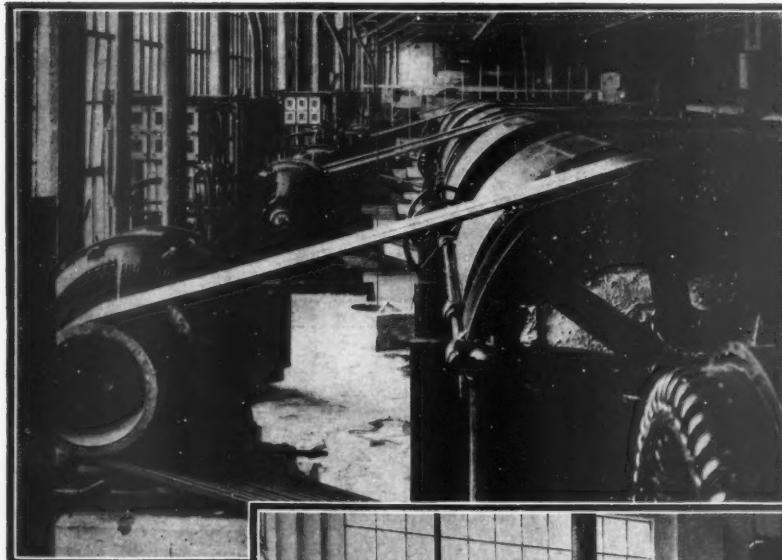
The coinage of the European country involved is badly depreciated. This information comes on excellent authority. A Pacific Coast mill, which under normal competition would have secured the business, thru loss of the order was forced to hand its employes an empty pay envelope for the equivalent of nearly 1,000 man-days.

St. Helens Making Towels

Early in March the St. Helens Pulp & Paper Company of St. Helens, Oregon, began production of a new hand towel of high absorbent quality. The stock is being produced on No. 2 machine and a folding machine has been installed to do the finishing.

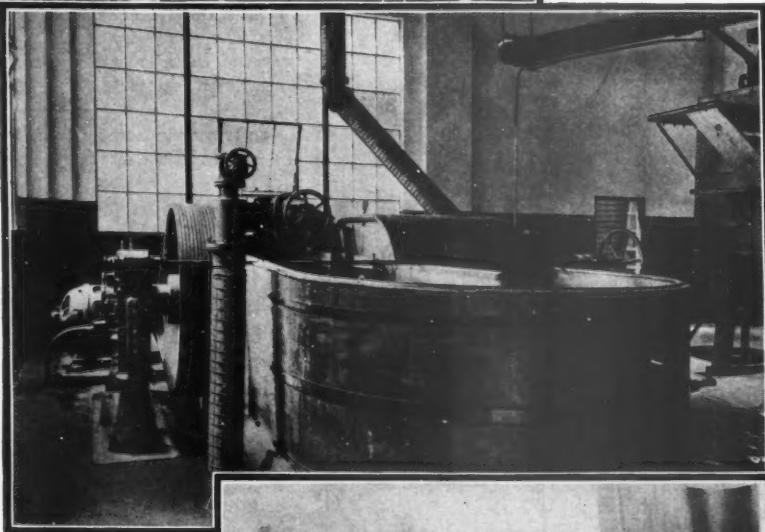
Andy Christ, president of Western Waxed Paper Company, Oakland, California, and golf swatter extraordinary, was a recent visitor to Portland.

... SAVE

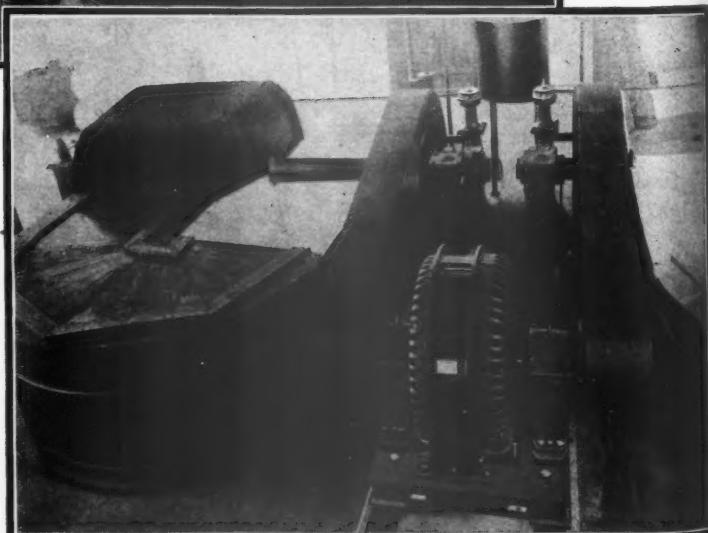


Beater room of Kalamazoo Vegetable Parchment Company, Kalamazoo, Michigan. These Westinghouse type CW Wound Rotor Motors have high torque with low starting current that permits positive starting with practically any position of roll or condition of stock.

A small beater in Port Angeles, Wash., mill of Olympic Forest Products Company. The Westinghouse type CS Induction Motor drives the beater through Cog-Belts, resulting in a very compact, reliable and sturdy drive.



Power costs are lower when power factor is improved. This 200-hp., 400-rpm. Westinghouse Synchronous Motor efficiently drives two beaters and in addition improves plant power factor at the Port Huron Sulphite and Paper Company, Port Huron, Michigan.



POWER COSTS

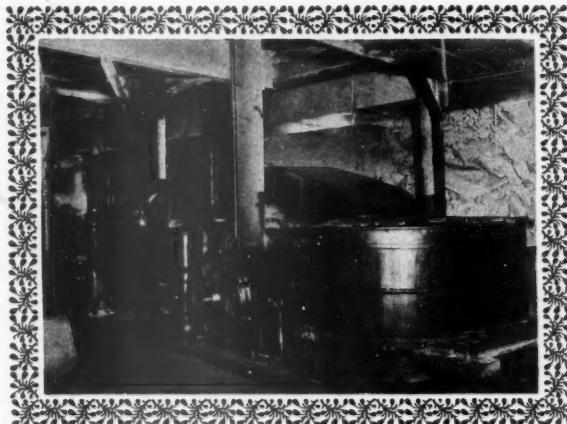
WITH

MODERN BEATER DRIVES

THERE are two ways in which modern beater motors, squirrel cage, wound rotor and synchronous, do their share in cutting pulp handling costs; (1) the power cost is lowered because of higher efficiency; (2) maintenance and repair costs are lowered because of better design.

For instance, a modern 75-horsepower Westinghouse type CS squirrel cage induction motor has an electrical efficiency at least 3% higher than an old squirrel cage motor. Based on 24-hour operation, 300 days a year and a one cent power rate, the new motor will save enough in power costs to pay for itself in less than five years.

In addition the new motor will show marked maintenance economies over the old; a heavier mechanical construction better withstands the varying beater loads; Sealed-sleeve bearings



For nearly 30 years Westinghouse Motors have been used to drive beaters. The illustration above shows a 1904 Westinghouse Motor driving a beater in a Canadian Paper Mill.

require attention only once or twice a year; double-protected windings are long-lived in spite of the moisture, mild acids or alkalis prevalent in the beater room.

Let Westinghouse engineers submit a betterment program that will help you handle pulp at lower cost. Write for additional information.

Westinghouse

Quality workmanship guarantees every Westinghouse product



When writing WESTINGHOUSE ELECTRIC & MFG. CO., please mention PACIFIC PULP AND PAPER INDUSTRY

CONTINUOUS OPERATION PROVES SKF DEPENDABILITY!



WHERE PERFORMANCE TAKES PREFERENCE OVER PRICE

TWENTY-FOUR HOURS A DAY...six days a week...that's giving **SKF** Bearings on the Camachine Winder plenty of opportunity to prove why "SKF Performance Takes Preference Over Price." An **SKF** Spherical Roller Bearing is located at either end of both of the drums supporting the roll of paper on the machine. Two other **SKF** Bearings are also used...one an outboard bearing and the other a thrust bearing on the vertical drive.

You may buy a bearing as a bargain but try and get a bargain out of using it, for nothing is apt to cost so much as a bearing that cost so little.

Nothing takes the place of dependability on this job. And it's mighty rugged and exacting service too, for the roll of paper revolves at speeds in excess of 3,000 F.P.M. and near the end of the run it weighs 16,000 pounds. At a speed of 3,200 F.P.M. these bearings revolve at 660 R.P.M. Smooth operation, long life, freedom from adjustments and very little maintenance prove **SKF**'s lowest cost per bearing hour where economies of production are expected and demanded.



SKF Industries of California, Inc.

221 Eleventh Street
San Francisco

430 Burnside St.
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Ball and Roller Bearings

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FIRST, LAST
ALWAYS

The Best Safety Device Known Is a Careful Man

Oregon SAFETY Code Gets Setback

With about 90% of the work of formulating an Oregon pulp and paper mill SAFETY code completed, the task has come to an indefinite standstill, because the state accident commission has notified the Oregon Industrial SAFETY Congress that for reasons of economy it will not meet the small office and stationery expenses incidental to producing the code.

Section 6624 of the original Oregon Workmen's Compensation Act, which has been in force for years, stipulates that the accident commission shall establish SAFETY standards in the industries coming under the act. Yet this has never been done. The section reads:

"Reduction for Work in Accident Prevention. It shall be the duty of the commissioner to establish standards or rules designed to promote organization and educational work in accident prevention, and every em-

ployer subject to the act shall be entitled to a reduction, or a further reduction, in rate of 5 per cent upon compliance with such standards or rules during any fiscal year:

"Provided, however, such employer shall file with the commission a written notice of his intention to comply with such rules, and such reduction shall not become effective prior to the filing of such notice."

The Oregon Industrial SAFETY Congress was set up about a year ago with the formulation of such SAFETY codes for the various industries in view. It is a semi-official body and through it codes were to be formulated with the aid of practical operating men in the pulp and paper and other industries to be adopted by the accident commission. Now, it is charged, the commission declines to provide the support necessary for the congress to function.

STATEMENT OF ACCIDENT EXPERIENCE—JANUARY, 1932

(Mills in the State of Washington)

Company—	Hours Worked	Total Accidents	Frequency Rate	Days Lost	Severity Rate	Standing
Puget Sound Pulp & Timber Co., Everett	51,410	0	0	0	0	1
Inland Empire Paper Co., Millwood	44,722	0	0	0	0	2
Pacific Straw Paper & Board Co., Longview	18,308	0	0	0	0	3
Everett Pulp & Paper Co., Everett	57,608	0	0	35	.607	4
Columbia River Paper Mills, Vancouver	39,906	0	0	25	.626	5
Longview Fibre Co., Longview	112,733	1	8.9	25	.222	6
Gray's Harbor Pulp & Paper Co., Hoquiam	42,363	1	23.6	2	.047	7
Crown Willamette Paper Co., Camas	204,688	5	24.4	187	.914	8
Rainier Pulp & Paper Co., Shelton	58,659	2	34.1	9	.153	9
National Paper Products Co., Port Townsend	68,474	4	58.4	17	.248	10
Shaffer Box Co., Tacoma	12,531	1	79.8	9	.719	11
Washington Pulp & Paper Corp., Port Angeles	55,246	7	126.7	111	2.009	12
Fibreboard Products Inc., Sumner	20,579	3	145.8	1,522	73.959	13
Puget Sound Pulp & Timber Co., Bellingham	26,264	5	190.4	65	2.475	14

The following mills did not report: Fibreboard Products Inc., Port Angeles; Pacific Coast Paper Mills, Bellingham. The following mills not in operation: Everett Pulp & Paper Co. (West Tacoma plant); Tumwater Paper Mills; St. Regis Kraft Co.; Puget Sound Pulp & Timber Co., Anacortes.

Spaulding Mill Seeks Some Cash

Raising \$62,000 cash is no sinecure these days, the directors of Spaulding Pulp & Paper Company have learned in the past few weeks. In order to fund unsecured debts totaling \$288,163.90 and provide a working capital by means of a \$350,000 first mortgage bond issue, the directors have asked the stockholders to subscribe for \$62,000 of the issue.

It is believed by company executives that there will be no difficulty persuading the creditors to accept bonds in lieu of cash if the stockholders will evidence their faith by putting up \$62,000 cash, but while they have readily subscribed to the soundness of the proposal they have not so far subscribed the cash.

No loss has been occasioned by the delay to date, says Secretary O. M. Allison, as under present market conditions the mill would have remained down in any case. It was operated for about ten days the early part of March to clean up some orders.

Paper Converting Offers New Handkerchief Machine

One of the new additions to the line of high speed paper converting machines made by the Paper Converting machine Co., Green Bay, Wisconsin, is the new handkerchief machine. In it the builders have incorporated their patented full rotary principle which is fa-

mous for producing a perfect product at all speeds. The new machine is rated as being able to produce 500 handkerchiefs per minute, quarter folded and cut, though higher production is possible.

Handkerchiefs can be made from either 3 or 4-ply stock and folding mechanism can be had to deliver them either quarter folded, interfolded, or in any special fold desired. A shear cut type of "cut off" is used in this machine. This type of "cut-off" is noted for its clean, square cut which adds materially to the appearance of the finished product.

At present two of these machines are in operation, one in the eastern states and the other in the mid-west. Both are giving excellent results.

W. J. Lawrence Elected Hercules Powder Director

William J. Lawrence, president of Paper Makers Chemical Corporation, a unit of Hercules Powder Company, has been elected a director of the Hercules Powder Company.

The head of Paper Makers Chemical Corporation becomes a member of the Hercules Board following the consolidation of that company with Hercules Powder Company, the merger having taken place in October, 1931.

PACIFIC PULP & PAPER INDUSTRY

News Print Production—January, 1932

"Production in Canada during January, 1932, amounted to 171,321 tons and shipments to 171,843 tons," the News Print Service Bureau reports. "Production in the United States was 94,247 tons and shipments 94,550 tons, making a total United States and Canadian news print production of 265,568 tons and shipments of 266,393 tons. During January, 23,991 tons of news print were made in Newfoundland and 1,255 tons in Mexico, so that the total North American production for the month amounted to 290,814 tons.

"The Canadian mills produced 11,752 tons less in January, 1932, than in January, 1931, which was a decrease of 6 per cent. The output in the United States was 6,947 tons or 7 per cent less than in January, 1931, in Newfoundland 1,595 tons or 6 per cent less, and in Mexico 168 tons more, making a total decrease of 20,126 tons or 6 per cent from January, 1931.

"Stocks of news print paper at Canadian mills totalled 53,683 tons at the end of January and at United States mills 32,406 tons, making a combined total of 86,089 tons compared with 86,913 tons on December 31."

NORTH AMERICAN PRODUCTION

	Canada	United States	Newfoundland	Mexico	Total
1932 January	171,321	94,247	23,991	1,255	290,814
1931 January	183,073	101,194	25,586	1,087	310,940
1930 January	206,955	124,851	23,263	1,568	356,637
1929 January	211,443	123,822	20,448	1,882	360,795
1928 January	187,849	119,525	17,939	1,168	326,481
1927 January	161,724	135,395	17,506	1,112	315,737
1926 January	139,688	140,003	13,862	935	294,488
1925 January	121,605	129,442	5,352	759	257,198

A Revised Form of Reports

"Production reports issued by the News Print Service Bureau," Secretary R. S. Kellogg announces, "hereafter will not carry capacity figures and operating percentage for the news print industry. The chief reason for this change is that such figures no longer coincide with the hard facts of operation.

"Based upon operating records during the best times over a period of years and with the addition of new machines, a total of 19,000 tons daily capacity for the North American news print industry was calculated in the early part of 1931. Now the picture is changed. Not only are there no more machines building, but it is also obvious that some machines cannot be operated at present price levels. In other words, the capacity of the industry for practical purposes cannot be determined simply by compiling the possible speeds and trims of all existing machines—whether they are running or not—but is definitely limited by a multitude of ECONOMIC FACTORS.

"For these reasons the Bureau reports are confined to actual production, shipments and stocks on hand. What might be produced under favorable conditions is already a matter of sufficient record."

Editor's Note—The emphasis indicated in bold face type above is our own. It will be recalled that this journal has frequently called attention to the inaccuracy reflected in paper industry statistics by including obsolescent equipment in any computation of per cent of capacity operations.

The Paper and Pulp Industry in December, 1931

According to identical mill reports to the Statistical Department of the American Paper and Pulp Association from members and cooperating organizations, the daily average of total paper production in December decreased 7.9% under November and 9.1% under De-

cember, 1930. The daily average wood pulp production in December was 8.6% below November, 1931, and 9.2% below December, 1930.

Compared with December a year ago, the daily average production registered a decrease in the following grades: Newsprint, uncoated book, paperboard, wrapping, tissue, writing, and hanging papers. Compared with November, 1931, the following percentage decreases were registered in the daily average production: Newsprint, 3.9%; paperboard, 15.7%; wrapping, 10.8%; tissue, 5.9%; writing, 3.4%; hanging, 7.4%, and building, 24.7%.

The twelve months' cumulative total of production of paper was 9.2% below the corresponding period in 1930 while shipments were 8.6% smaller than a year ago. Newsprint, bag, writing and building papers have shown improvement while uncoated book, paperboard and hanging papers showed practically no change in production at the end of the twelve-month period as compared with the end of the eleven-month period in 1931.

The twelve months' cumulative total of wood pulp production for 1931 was reported as 14.3% below the level of the same period in 1930.

Total shipments of wood pulp to the outside market were 31.4% below the level of the twelve months' total of 1930. Bleached sulphite, mitscherlich sulphite and kraft pulp shipments to the open market were greater than in the twelve months of 1930.

Total wood pulp inventories showed an increase, and at the end of December were 9.6% above the level of December, 1930. All grades, excepting bleached sulphite, kraft and soda pulp, showed inventories above the level of December, 1930.

REPORT OF PAPER OPERATIONS IN IDENTICAL MILLS FOR THE MONTH OF DECEMBER, 1931

GRADE:	Production Tons	Shipments Tons	Stocks on Hand—Tons
Newsprint	93,861	93,550	32,709
Book Uncoated	68,002	70,007	44,416
Paperboard	121,200	118,350	61,016
Wrapping	33,178	34,631	43,849
Bag	11,642	11,247	5,460
Writing, etc.	19,391	19,219	43,369
Tissue	4,935	4,979	3,903
Hanging	3,255	2,726	3,781
Building	3,097	2,971	3,525
Other grades	12,576	11,739	14,817
Total All Grades Dec., 1931	371,137	369,419	256,845
Total All Grades 12 Mos., 1931	5,137,138	5,139,089	256,845
Total All Grades 12 Mos., 1930	5,657,702	5,624,705	268,764

REPORT OF PAPER OPERATIONS IN IDENTICAL MILLS FOR THE MONTH OF DECEMBER, 1931

GRADE:	Production Tons	Used During Month—Tons	Shipped During Month—Tons	Stocks on Hand—Tons	End of Month—Tons
Groundwood	70,692	68,282	346	56,747	
Sulphite, News Grade	24,148	23,682	153	6,911	
Sulphite, Bleached	15,937	14,002	2,316	3,154	
Sulphite, Easy Bleaching	2,105	1,851	266	1,494	
Sulphite, Mitscherlich	2,854	1,843	550	2,252	
Kraft Pulp	21,594	17,381	4,051	3,451	
Soda Pulp	14,726	13,394	1,580	2,618	
Other Grades	460	371	31	176	
Total All Grades Dec., 1931	152,516	140,806	9,293	76,803	
Total All Grades 12 Mos., 1931	1,997,531	1,823,674	166,326	76,803	
Total All Grades 12 Mos., 1930	2,329,714	2,081,533	242,490	70,089	

Crown Willamette Earnings Improved

Crown Willamette Paper Company and subsidiaries for the nine months ended January 31, 1932, report net profits aggregating \$2,020,318, equivalent to \$10.10 per share on the 200,000 cumulative first preferred shares outstanding.

These earnings, which include the Crown Willamette Paper Company's proportion of the profits of Pacific Mills, Ltd., compare with net profits of \$1,862,549 for the corresponding period ended January 31, 1931, equivalent to \$9.31 per share on the same number of first preferred shares outstanding.

Gross income for the nine months ended January 31, 1932, before depreciation, depletion, bond interest and taxes, amounted to \$5,678,222. This compares with \$5,559,928 reported on an identical basis for the same period in the preceding fiscal year.

Summarized earnings statement of Crown Willamette Paper Company and its subsidiaries, including Pacific Mills, Ltd., for the nine months ended January 31, is as follows:

	1932	1931
Profit before depreciation, depletion, bond interest, U. S. and Canadian income taxes	\$5,678,222	\$5,559,928
Depreciation	2,055,927	1,966,280
Depletion	279,005	392,508
Bond interest	968,384	999,321
U. S. and Canadian income taxes	317,787	302,032
Profit bef. deduction of minority stockholders' interest	2,057,119	1,899,787
Minority stockholders' interest	36,801	37,238
Net profit	2,020,318	1,862,549

Crown Zellerbach Earnings Down

Crown Zellerbach Corporation, for the nine months ended January 31, 1932, reports consolidated net profit of \$1,414,407 after all charges and after deducting minority stockholders' interest, equivalent to \$5.64 per share on the 250,601 combined series "A" and "B" preference shares outstanding. These earnings compare with \$1,728,301 reported in the corresponding period of the preceding fiscal year.

Consolidated profit before depreciation, depletion, bond interest and income taxes for the three-quarters ended January 31, 1932, totaled \$7,640,973 as against \$8,078,341 for the same nine months ended January 31, 1931.

Comparative summary of consolidated income account of Crown Zellerbach Corporation and its subsidiaries for the nine months ended January 31 is as follows:

	1932	1931
Profit before depreciation, depletion, bond interest and income taxes	\$7,640,973	\$8,078,341
Depreciation	2,898,656	2,818,397
Depletion	282,230	392,508
Bond and debenture interest	1,400,454	1,457,594
U. S. and Canadian income taxes	374,707	409,802
Profit before deduction of minority stockholders' interest	2,684,926	3,000,040
Minority stockholders' interest	1,270,519	1,271,739
Net profit	1,414,407	1,728,301

Rainier Pulp Widely Distributed

Among foreign shipments loaded at Tacoma by the Rainier Pulp & Paper Company of Shelton, Washington recently were two for Marseilles. The Italian steamer California, picked up 500 tons, and the Cellina, of the same line loaded 220 tons of the wood product. The Japanese N. Y. K. liner Shidzuoka Maru, loaded 520 tons of pulp.

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costs are felt the least

Any felt that will last several days longer than the general run of felts saves a bit of expense worth consideration. And in the course of the year's production the saving becomes a factor of prime importance—for money saved is profit made. . . .

Orr Felts, on a test with competing makes, averaged nine days longer service. Figure nine days more on your year's run, cut the figures in half if you will. Either way, the saving is important. Then call for an Orr representative.

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for every machine
requirement.*

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Orr Felt & Blanket Co.
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PACIFIC PULP & PAPER INDUSTRY

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 The stopping place in Portland
 for Pulp and Paper Men



Sixth at Main Street
 PORTLAND
 OREGON
 200 Rooms—200 Baths
 Convenient Downtown
 Location.
 Reasonable Rates
 Prevail
 LOUIS E. BOGEL, Resident Manager

Hawley Mill Shows Loss
 Hawley Pulp & Paper Company in 1931 showed a net loss after all charges, of \$113,242 against a net profit of \$177,349 for 1930, also after all charges, including \$140,000 of dividends on preferred stock. Hawley paid no dividends on its 20,000 shares of 7% first preferred last year.

Operating profit before deduction of charges, for

1931 was \$331,713. Of this \$47,315 represents company's non-operating profit from purchase of its own bonds for redemption purposes.

The 1931 loss is after charging off \$276,188 for depreciation on buildings, machinery and equipment. This charge-off for depreciation represents a little more than 6% of the company's plant investment as carried at end of 1930, and is in line with rate of depreciation charge-offs maintained by the company for the past several years.

During the depression period Hawley has improved ratio of quick assets to current liabilities in this fashion:

	Quick Assets, 3 Years	1929	1930	1931
Cash	\$ 233,156	\$ 125,306	\$ 204,381	
Receivables	261,055	153,756	291,580	
Inventories	655,109	941,051	580,801	
Totals	\$1,149,321	\$1,220,113	\$1,076,763	
Current liabilities	615,434	569,422	332,128	
Ratio	1.86-1	2.14-1	3.24-1	

Swedes Lower Pulp Mill Wage Scales

The Swedish Wood Pulp Association announced a 6% cut in hourly wage rates and a 12% cut in piece-work rates, effective February 23.

IMPORTS OF PULP WOOD AND WOOD PULP INTO THE UNITED STATES
 BY COUNTRIES AND CUSTOMS DISTRICTS

December, 1931

Compiled by the U. S. Department of Commerce, Bureau of Foreign and Domestic Commerce
 (Figures Subject to Revision)

Countries	PULP WOODS						ROSSED					
	Rough		Pealed		Spirce		Spirce		Spirce		Spirce	
Cords	Spirce Dollars	Cords	Other Dollars	Cords	Spirce Dollars	Cords	Other Dollars	Cords	Spirce Dollars	Cords	Other Dollars	
Canada	2,533	16,483			23,089	215,143	3,300	28,823	1,006	11,689		
Total	2,533	16,483			23,089	215,143	3,300	28,823	1,006	11,689		
Total Imports of Pulpwood, December, 1931—29,928 Cords—\$272,138.												

COUNTRIES:	WOOD PULP						SODA PULP, UNBLEACHED AND BLEACHED					
	Mechanically Unbleached Tons		Ground Bleached Tons Dollars		Chemical Unbleached Sulphite Tons Dollars		Chemical Bleached Sulphite Tons Dollars		Chemical Unbleached Sulphite Tons Dollars		Chemical Bleached Sulphite Tons Dollars	

CUSTOMS DISTRICTS:	WOOD PULP						SODA PULP, UNBLEACHED AND BLEACHED					
	Mechanically Unbleached Tons		Ground Bleached Tons Dollars		Chemical Unbleached Sulphite Tons Dollars		Chemical Bleached Sulphite Tons Dollars		Chemical Unbleached Sulphite Tons Dollars		Chemical Bleached Sulphite Tons Dollars	
Maine and New Hampshire	1,871	51,863			1,360	62,016	2,986	163,293	4,140	127,204		
Vermont	806	15,925			251	8,107	853	45,680	625	42,019	2,840	266,825
Massachusetts	166	2,949	78	1,503	3,010	142,042	3,882	197,503	6,760	232,451	56	3,066
Connecticut					1,267	42,228						
St. Lawrence	725	15,310			357	14,424	1,914	113,684	58	3,860	43	3,933
Rochester	29	931					78	3,666				
Buffalo	514	11,013			1,441	62,037	854	57,437				
New York	6,352	124,325	725	15,823	10,293	381,514	3,076	133,344	1,661	49,400	51	3,242
Philadelphia	4,073	110,279	295	6,494	4,427	191,422	2,235	112,274	3,097	110,649		
Maryland	572	14,785	375	8,950	13,253	536,914	1,633	79,832	5,972	168,846	99	5,698
Virginia			40	881	1,504	71,689	364	18,945	4,315	132,425		
Mobile					30	1,071			27	1,101		
New Orleans					100	3,867			1,457	42,889		
Los Angeles												
San Francisco					500	5,136						
Oregon									503	13,397		
Washington							107	4,926				
Dakota	347	6,334				34	1,643	233		7,805		
Duluth and Superior	404	11,017			802	35,572						
Wisconsin	2,154	39,060			3,181	119,393	4,589	284,980	3,880	111,394	340	29,210
Total	18,213	403,811	2,024	45,161	41,776	1,677,432	22,605	1,217,207	32,728	1,043,640	3,429	311,974

Total Imports, All Grades of Wood Pulp, December, 1931—120,870 tons—\$4,703,736.